

STATE OF NEW HAMPSHIRE INTER-DEPARTMENT COMMUNICATION

DATE: October 27, 2021

FROM: Andrew O'Sullivan
Wetlands Program Manager

AT (OFFICE): Department of
Transportation

SUBJECT: Dredge & Fill Application
Wakefield 43799

Bureau of
Environment

TO: Karl Benedict, Public Works Permitting Officer
New Hampshire Wetlands Bureau
29 Hazen Drive, P.O. Box 95
Concord, NH 03302-0095

Forwarded herewith is the application package prepared by NH DOT District 3 for the subject minimum impact project. The project is located along NH Route 153 in the Town of Wakefield, NH. The proposed work includes the replacement of an existing deteriorated 57"H x 38" V (11.6 sf) corrugated metal pipe arch with an 8' wide by 3' tall (24 sf) pre-cast concrete box structure. The new structure will be approximately the same length as the existing structure.

This project was reviewed at the Natural Resource Agency Coordination Meeting on July 21, 2021. A copy of the minutes has been included with this application package. A copy of this application and plans can be accessed on the Departments website via the following link: <http://www.nh.gov/dot/org/projectdevelopment/environment/units/program-management/wetland-applications.htm>.

NHDOT anticipates and request that this project be reviewed and permitted by the Army Corp of Engineers through the State Programmatic General Permit process. A copy of the application has been sent to the Army Corp of Engineers.

No Mitigation is required for the proposed work.

The lead people to contact for this project are Samantha Fifield, District 3 (Samantha.Fifield @dot.nh.gov) or Andrew O'Sullivan, Wetlands Program Manager, Bureau of Environment (271-3226 or Andrew.O'Sullivan@dot.nh.gov).

A payment voucher has been processed for this application (Voucher # 660615) in the amount of \$400.00.

If and when this application meets with the approval of the Bureau, please send the permit directly to Andrew O'Sullivan, Wetlands Program Manager, Bureau of Environment.

AMO:amo

cc:

BOE Original

Town of Wakefield (4 copies via certified mail)

David Trubey, NH Division of Historic Resources (Cultural Review Within)

Carol Henderson, NH Fish & Game (via electronic notification)

Maria Tur, US Fish & Wildlife (via electronic notification)

Beth Alafat & Jeanie Brochi, US Environmental Protection Agency (via electronic notification)

Michael Hicks & Rick Kristoff, US Army Corp of Engineers (via electronic notification)

Kevin Nyhan, BOE (via electronic notification)

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**STANDARD DREDGE AND FILL
WETLANDS PERMIT APPLICATION**
Water Division/Land Resources Management
Wetlands Bureau
[Check the Status of your Application](#)



RSA/Rule: RSA 482-A/Env-Wt 100-900

APPLICANT'S NAME: NH Department of Transportation **TOWN NAME:** Wakefield

Administrative Use Only	Administrative Use Only	Administrative Use Only	File No.:
			Check No.:
			Amount:
			Initials:

A person may request a waiver of the requirements in Rules Env-Wt 100-900 to accommodate situations where strict adherence to the requirements would not be in the best interest of the public or the environment but is still in compliance with RSA 482-A. A person may also request a waiver of the standards for existing dwellings over water pursuant to RSA 482-A:26, III(b). For more information, please consult the [Waiver Request Form](#).

SECTION 1 - REQUIRED PLANNING FOR ALL PROJECTS (Env-Wt 306.05; RSA 482-A:3, I(d)(2))	
Please use the Wetland Permit Planning Tool (WPPT) , the Natural Heritage Bureau (NHB) DataCheck Tool , the Aquatic Restoration Mapper , or other sources to assist in identifying key features such as: priority resource areas (PRAs) , protected species or habitats , coastal areas, designated rivers, or designated prime wetlands.	
Has the required planning been completed?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Does the property contain a PRA? If yes, provide the following information:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<ul style="list-style-type: none"> • Does the project qualify for an Impact Classification Adjustment (e.g. NH Fish and Game Department (NHF&G) and NHB agreement for a classification downgrade) or a Project-Type Exception (e.g. Maintenance or Statutory Permit-by-Notification (SPN) project)? See Env-Wt 407.02 and Env-Wt 407.04. 	<input type="checkbox"/> Yes <input type="checkbox"/> No
<ul style="list-style-type: none"> • Protected species or habitat? <ul style="list-style-type: none"> ○ If yes, species or habitat name(s): <input style="width: 100px;" type="text"/> ○ NHB Project ID #: <input style="width: 100px;" type="text"/> 	<input type="checkbox"/> Yes <input type="checkbox"/> No
• Bog?	<input type="checkbox"/> Yes <input type="checkbox"/> No
• Floodplain wetland contiguous to a tier 3 or higher watercourse?	<input type="checkbox"/> Yes <input type="checkbox"/> No
• Designated prime wetland or duly-established 100-foot buffer?	<input type="checkbox"/> Yes <input type="checkbox"/> No
• Sand dune, tidal wetland, tidal water, or undeveloped tidal buffer zone?	<input type="checkbox"/> Yes <input type="checkbox"/> No
Is the property within a Designated River corridor? If yes, provide the following information:	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<ul style="list-style-type: none"> • Name of Local River Management Advisory Committee (LAC): <input style="width: 100px;" type="text"/> • A copy of the application was sent to the LAC on Month: <input style="width: 50px;" type="text"/> Day: <input style="width: 50px;" type="text"/> Year: <input style="width: 50px;" type="text"/> 	

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For dredging projects, is the subject property contaminated? • If yes, list contaminant: <input type="text"/>	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
Is there potential to impact impaired waters, class A waters, or outstanding resource waters?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
For stream crossing projects, provide watershed size (see WPPT or Stream Stats): <input type="text" value="N/A"/>	
SECTION 2 - PROJECT DESCRIPTION (Env-Wt 311.04(i))	
Provide a brief description of the project and the purpose of the project, outlining the scope of work to be performed and whether impacts are temporary or permanent. DO NOT reply "See attached"; please use the space provided below.	
Upgrade a culvert by replacing an existing deteriorated 57"H x 38" V (11.6 sf) corrugated metal pipe arch with a 8' wide by 3' tall (24 sf) pre-cast concrete box structure. The new structure will be approximately the same length as the existing structure. Both temporary and permanent impacts will be required. Permanent impacts for grading at inlet/outlet. Temporary impacts for access and installation of erosion control measures. Guardrail will also be installed on the downstream side of the roadway to protect traffic from the ponded area.	
SECTION 3 - PROJECT LOCATION	
Separate wetland permit applications must be submitted for each municipality within which wetland impacts occur.	
ADDRESS: <input type="text" value="NH Route 153"/>	
TOWN/CITY: <input type="text" value="Wakefield"/>	
TAX MAP/BLOCK/LOT/UNIT: <input type="text" value="DOT ROW"/>	
US GEOLOGICAL SURVEY (USGS) TOPO MAP WATERBODY NAME: <input type="text"/>	
<input checked="" type="checkbox"/> N/A	
(Optional) LATITUDE/LONGITUDE in decimal degrees (to five decimal places):	
	<input type="text" value="43.63898° North"/>
	<input type="text" value="-70.98168° West"/>

SECTION 4 - APPLICANT (DESIRED PERMIT HOLDER) INFORMATION (Env-Wt 311.04(a))		
If the applicant is a trust or a company, then complete with the trust or company information.		
NAME: New Hampshire Department of Transportation, Samantha Fifield		
MAILING ADDRESS: 2 Sawmill Road		
TOWN/CITY: Gilford	STATE: NH	ZIP CODE: 03249
EMAIL ADDRESS: Samantha.D.Fifield@dot.nh.gov		
FAX: [REDACTED]	PHONE: 524-6667	
ELECTRONIC COMMUNICATION: By initialing here: SDF, I hereby authorize NHDES to communicate all matters relative to this application electronically.		
SECTION 5 - AUTHORIZED AGENT INFORMATION (Env-Wt 311.04(c))		
<input checked="" type="checkbox"/> N/A		
LAST NAME, FIRST NAME, M.I.: [REDACTED]		
COMPANY NAME: [REDACTED]		
MAILING ADDRESS: [REDACTED]		
TOWN/CITY: [REDACTED]	STATE: [REDACTED]	ZIP CODE: [REDACTED]
EMAIL ADDRESS: [REDACTED]		
FAX: [REDACTED]	PHONE: [REDACTED]	
ELECTRONIC COMMUNICATION: By initialing here [REDACTED], I hereby authorize NHDES to communicate all matters relative to this application electronically.		
SECTION 6 - PROPERTY OWNER INFORMATION (IF DIFFERENT THAN APPLICANT) (Env-Wt 311.04(b))		
If the owner is a trust or a company, then complete with the trust or company information.		
<input type="checkbox"/> Same as applicant		
NAME: NH Department of Transportation, Andrew O'Sullivan		
MAILING ADDRESS: 7 Hazen Drive; PO Box 483		
TOWN/CITY: Concord	STATE: NH	ZIP CODE: 03302
EMAIL ADDRESS: andrew.o'sullivan@dot.nh.gov		
FAX: 271-7199	PHONE: 271-3226	
ELECTRONIC COMMUNICATION: By initialing here AMO, I hereby authorize NHDES to communicate all matters relative to this application electronically.		

SECTION 7 - RESOURCE-SPECIFIC CRITERIA ESTABLISHED IN Env-Wt 400, Env-Wt 500, Env-Wt 600, Env-Wt 700, OR Env-Wt 900 HAVE BEEN MET (Env-Wt 313.01(a)(3))

Describe how the resource-specific criteria have been met for each chapter listed above (please attach information about stream crossings, coastal resources, prime wetlands, or non-tidal wetlands and surface waters):

Env-Wt 400: The wetlands and waterway features were delineated and classified by Sarah Large and Deidra Benjamin on 6/18/2021 in accordance with Env-Wt 406. This project will have temporary and permanent impacts to L2UB24Hh and PFO1F designated wetlands.

Env-Wt 600: The project is not located on the coast.

Env-Wt 700: The project area does not impact a prime wetland or regulatory prime wetland buffer.

Env-Wt 900: This project is not a stream crossing, but rather a culvert that convey water from an upland wetland to a lowerland wetland.

SECTION 8 - AVOIDANCE AND MINIMIZATION

Impacts within wetland jurisdiction must be avoided to the maximum extent practicable (Env-Wt 313.03(a)).* Any project with unavoidable jurisdictional impacts must then be minimized as described in the [Wetlands Best Management Practice Techniques For Avoidance and Minimization](#) and the [Wetlands Permitting: Avoidance, Minimization and Mitigation Fact Sheet](#). For minor or major projects, a functional assessment of all wetlands on the project site is required (Env-Wt 311.03(b)(10)).*

Please refer to the application checklist to ensure you have attached all documents related to avoidance and minimization, as well as functional assessment (where applicable). Use the [Avoidance and Minimization Checklist](#), the [Avoidance and Minimization Narrative](#), or your own avoidance and minimization narrative.

*See Env-Wt 311.03(b)(6) and Env-Wt 311.03(b)(10) for shoreline structure exemptions.

SECTION 9 - MITIGATION REQUIREMENT (Env-Wt 311.02)

If unavoidable jurisdictional impacts require mitigation, a mitigation [pre-application meeting](#) must occur at least 30 days but not more than 90 days prior to submitting this Standard Dredge and Fill Permit Application.

Mitigation Pre-Application Meeting Date: Month: 7 Day: 21 Year: 2021

N/A - Mitigation is not required

SECTION 10 - THE PROJECT MEETS COMPENSATORY MITIGATION REQUIREMENTS (Env-Wt 313.01(a)(1)c)

Confirm that you have submitted a compensatory mitigation proposal that meets the requirements of Env-Wt 800 for all permanent unavoidable impacts that will remain after avoidance and minimization techniques have been exercised to the maximum extent practicable: I confirm submittal.

N/A – Compensatory mitigation is not required

SECTION 11 - IMPACT AREA (Env-Wt 311.04(g))

For each jurisdictional area that will be/has been impacted, provide square feet (SF) and, if applicable, linear feet (LF) of impact, and note whether the impact is after-the-fact (ATF; i.e., work was started or completed without a permit).

For intermittent and ephemeral streams, the linear footage of impact is measured along the thread of the channel. *Please note, installation of a stream crossing in an ephemeral stream may be undertaken without a permit per Rule Env-Wt 309.02(d), however other dredge or fill impacts should be included below.*

For perennial streams/ivers, the linear footage of impact is calculated by summing the lengths of disturbances to the channel and banks.

Permanent impacts are impacts that will remain after the project is complete (e.g., changes in grade or surface materials).

Temporary impacts are impacts not intended to remain (and will be restored to pre-construction conditions) after the project is completed.

JURISDICTIONAL AREA		PERMANENT			TEMPORARY		
		SF	LF	ATF	SF	LF	ATF
Wetlands	Forested Wetland	29.7		<input type="checkbox"/>	67.8		<input type="checkbox"/>
	Scrub-shrub Wetland			<input type="checkbox"/>			<input type="checkbox"/>
	Emergent Wetland			<input type="checkbox"/>			<input type="checkbox"/>
	Wet Meadow			<input type="checkbox"/>			<input type="checkbox"/>
	Vernal Pool			<input type="checkbox"/>			<input type="checkbox"/>
	Designated Prime Wetland			<input type="checkbox"/>			<input type="checkbox"/>
	Duly-established 100-foot Prime Wetland Buffer			<input type="checkbox"/>			<input type="checkbox"/>
Surface Water	Intermittent / Ephemeral Stream			<input type="checkbox"/>			<input type="checkbox"/>
	Perennial Stream or River			<input type="checkbox"/>			<input type="checkbox"/>
	Lake / Pond	42.5		<input type="checkbox"/>	126.6		<input type="checkbox"/>
	Docking - Lake / Pond			<input type="checkbox"/>			<input type="checkbox"/>
	Docking - River			<input type="checkbox"/>			<input type="checkbox"/>
Banks	Bank - Intermittent Stream			<input type="checkbox"/>			<input type="checkbox"/>
	Bank - Perennial Stream / River			<input type="checkbox"/>			<input type="checkbox"/>
	Bank / Shoreline - Lake / Pond			<input type="checkbox"/>	54.9		<input type="checkbox"/>
Tidal	Tidal Waters			<input type="checkbox"/>			<input type="checkbox"/>
	Tidal Marsh			<input type="checkbox"/>			<input type="checkbox"/>
	Sand Dune			<input type="checkbox"/>			<input type="checkbox"/>
	Undeveloped Tidal Buffer Zone (TBZ)			<input type="checkbox"/>			<input type="checkbox"/>
	Previously-developed TBZ			<input type="checkbox"/>			<input type="checkbox"/>
	Docking - Tidal Water			<input type="checkbox"/>			<input type="checkbox"/>
TOTAL		72.2			249.3		

SECTION 12 - APPLICATION FEE (RSA 482-A:3, I)

MINIMUM IMPACT FEE: Flat fee of \$400.

NON-ENFORCEMENT RELATED, PUBLICLY-FUNDED AND SUPERVISED RESTORATION PROJECTS, REGARDLESS OF IMPACT CLASSIFICATION: Flat fee of \$400 (refer to RSA 482-A:3, 1(c) for restrictions).

MINOR OR MAJOR IMPACT FEE: Calculate using the table below:

Permanent and temporary (non-docking): SF × \$0.40 = \$

Seasonal docking structure: SF × \$2.00 = \$

Permanent docking structure: SF × \$4.00 = \$

Projects proposing shoreline structures (including docks) add \$400 = \$

Total = \$ 400

The application fee for minor or major impact is the above calculated total or \$400, whichever is greater = \$ 400

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SECTION 13 - PROJECT CLASSIFICATION (Env-Wt 306.05)

Indicate the project classification.

<input checked="" type="checkbox"/> Minimum Impact Project	<input type="checkbox"/> Minor Project	<input type="checkbox"/> Major Project
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SECTION 14 - REQUIRED CERTIFICATIONS (Env-Wt 311.11)

Initial each box below to certify:

Initials: SDF _____ _____	To the best of the signer's knowledge and belief, all required notifications have been provided.
Initials: SDF _____ _____	The information submitted on or with the application is true, complete, and not misleading to the best of the signer's knowledge and belief.
Initials: SDF _____ _____	The signer understands that: <ul style="list-style-type: none"> The submission of false, incomplete, or misleading information constitutes grounds for NHDES to: <ol style="list-style-type: none"> Deny the application. Revoke any approval that is granted based on the information. If the signer is a certified wetland scientist, licensed surveyor, or professional engineer licensed to practice in New Hampshire, refer the matter to the joint board of licensure and certification established by RSA 310-A:1. The signer is subject to the penalties specified in New Hampshire law for falsification in official matters, currently RSA 641. The signature shall constitute authorization for the municipal conservation commission and the Department to inspect the site of the proposed project, except for minimum impact forestry SPN projects and minimum impact trail projects, where the signature shall authorize only the Department to inspect the site pursuant to RSA 482-A:6, II.
Initials: _____ _____ _____	If the applicant is not the owner of the property, each property owner signature shall constitute certification by the signer that he or she is aware of the application being filed and does not object to the filing.

SECTION 15 - REQUIRED SIGNATURES (Env-Wt 311.04(d); Env-Wt 311.11)

SIGNATURE (OWNER): <i>Samantha D. Fifield</i>	PRINT NAME LEGIBLY: Samantha D. Fifield	DATE: 10-14-21
SIGNATURE (APPLICANT, IF DIFFERENT FROM OWNER): _____	PRINT NAME LEGIBLY: _____	DATE: _____
SIGNATURE (AGENT, IF APPLICABLE): _____	PRINT NAME LEGIBLY: _____	DATE: _____

SECTION 16 - TOWN / CITY CLERK SIGNATURE (Env-Wt 311.04(f))

As required by RSA 482-A:3, I(a)(1), I hereby certify that the applicant has filed four application forms, four detailed plans, and four USGS location maps with the town/city indicated below.

TOWN/CITY CLERK SIGNATURE: _____	PRINT NAME LEGIBLY: Exempt, State Agency per RSA 482-A:31(a)(1)
TOWN/CITY: _____	DATE: _____

DIRECTIONS FOR TOWN/CITY CLERK:

Per RSA 482-A:3, I(a)(1)

1. IMMEDIATELY sign the original application form and four copies in the signature space provided above.
2. Return the signed original application form and attachments to the applicant so that the applicant may submit the application form and attachments to NHDES by mail or hand delivery.
3. IMMEDIATELY distribute a copy of the application with one complete set of attachments to each of the following bodies: the municipal Conservation Commission, the local governing body (Board of Selectmen or Town/City Council), and the Planning Board.
4. Retain one copy of the application form and one complete set of attachments and make them reasonably accessible for public review.

DIRECTIONS FOR APPLICANT:

Submit the original permit application form bearing the signature of the Town/City Clerk, additional materials, and the application fee to NHDES by mail or hand delivery at the address at the bottom of this page. Make check or money order payable to "Treasurer – State of NH".

Keep this checklist for your reference; do not submit with your application.

APPLICATION CHECKLIST

Unless specified, all items below are required. Failure to provide the required items will delay a decision on your project and may result in denial of your application. Please reference statute RSA 482-A, Fill and Dredge in Wetlands, and the [Wetland Rules Env-Wt 100-900](#).

- The completed, dated, signed, and certified application (Env-Wt 311.03(b)(1)).
- Correct fee as determined in RSA 482-A:3, I(b) or (c), subject to any cap established by RSA 482-A:3, X (Env-Wt 311.03(b)(2)). Make check or money order payable to "Treasurer – State of NH".
- The Required Planning actions required by Env-Wt 311.01(a)-(c) and Env-Wt 311.03(b)(3).
- [US Army Corps of Engineers \(ACE\) "Appendix B, New Hampshire General Permits \(GPs\), Required Information and Corps Secondary Impacts Checklist"](#) and its required attachments (Env-Wt 307.02). This includes the [US Fish and Wildlife Service IPAC review](#) and [Section 106 Historic/Archaeological Resource review](#).
- Project plans described in Env-Wt 311.05 (Env-Wt 311.03(b)(4)).
- Maps, or electronic shape files and meta data, and other attachments specified in Env-Wt 311.06 (Env-Wt 311.03(b)(5)).
- Explanation of the methods, timing, and manner as to how the project will meet standard permit conditions required in Env-Wt 307 (Env-Wt 311.03(b)(7)).
- If applicable, the information regarding proposed compensatory mitigation specified in Env-Wt 311.08 and Chapter Env-Wt 800 - [Permittee Responsible Mitigation Project Worksheet](#), unless not required under Env-Wt 313.04 (Env-Wt 311.03(b)(8); Env-Wt 311.08; Env-Wt 313.04).
- Any additional information specific to the **type of resource** as specified in Env-Wt 311.09 (Env-Wt 311.03(b)(9); Env-Wt 311.04(j)).
- Project specific information required by Env-Wt 500, Env-Wt 600, and Env-Wt 900 (Env-Wt 311.03(b)(11)).
- A list containing the name, mailing address and tax map/lot number of each abutter to the subject property (Env-Wt 311.03(b)(12)).
- Copies of certified postal receipts or other proof of receipt of the notices that are required by RSA 482-A:3, I(d) (Env-Wt 311.03(b)(13)).
- Project design considerations required by Env-Wt 313 (Env-Wt 311.04(j)).
- Town tax map showing the subject property, the location of the project on the property, and the location of properties of abutters with each lot labeled with the name and mailing address of the abutter (Env-Wt 311.06(a)).
- Dated and labeled color photographs that:
 - (1) Clearly depict:
 - a. All jurisdictional areas, including but not limited to portions of wetland, shoreline, or surface water where impacts have or are proposed to occur.
 - b. All existing shoreline structures.
 - (2) Are mounted or printed no more than 2 per sheet on 8.5 x 11 inch sheets (Env-Wt 311.06(b)).
- A copy of the appropriate US Geological Survey map or updated data based on LiDAR at a scale of one inch equals 2,000 feet showing the location of the subject property and proposed project (Env-Wt 311.06(c)).
- A narrative that describes the work sequence, including pre-construction through post-construction, and the relative timing and progression of all work (Env-Wt 311.06(d)).

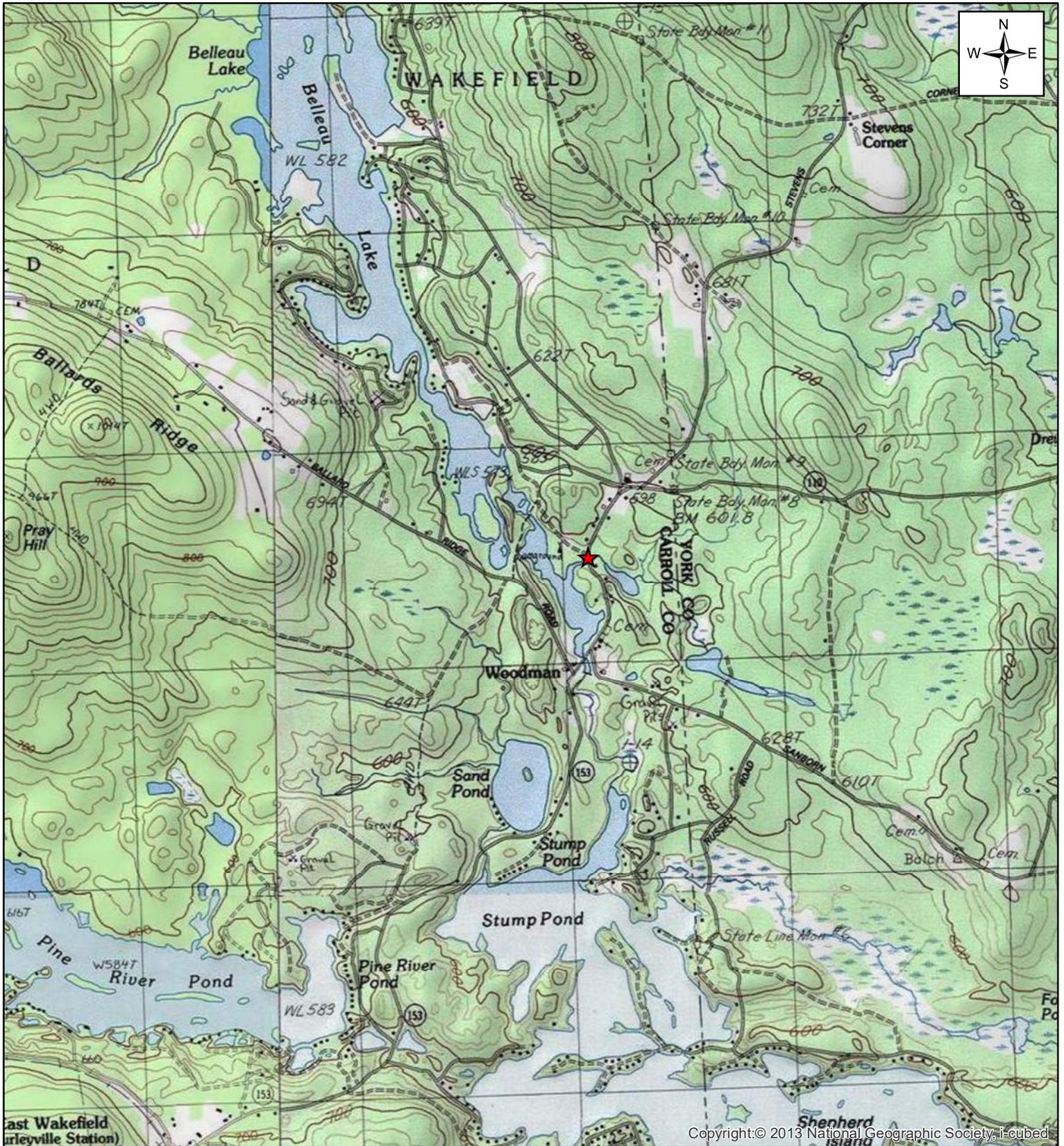
irm@des.nh.gov or (603) 271-2147

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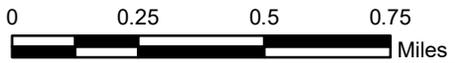
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- For all projects in the protected tidal zone, a copy of the recorded deed with book and page numbers for the property (Env-Wt 311.06(e)).
 - If the applicant is not the owner in fee of the subject property, documentation of the applicant's legal interest in the subject property, provided that for utility projects in a utility corridor, such documentation may comprise a list that:
 - (1) Identifies the county registry of deeds and book and page numbers of all of the easements or other recorded instruments that provide the necessary legal interest; and
 - (2) Has been certified as complete and accurate by a knowledgeable representative of the applicant (Env-Wt 311.06(f)).
 - The NHB memo containing the NHB identification number and results as well as any written follow-up communications such as additional memos or email communications with either NHB or NHF&G (Env-Wt 311.06(g)). See [Wetlands Permitting: Protected Species and Habitat Fact Sheet](#).
 - A statement of whether the applicant has received comments from the local conservation commission and, if so, how the applicant has addressed the comments (Env-Wt 311.06(h)).
 - For projects in LAC jurisdiction, a statement of whether the applicant has received comments from the LAC and, if so, how the applicant has addressed the comments (Env-Wt 311.06(i)).
 - If the applicant is also seeking to be covered by the state general permits, a statement of whether comments have been received from any federal agency and, if so, how the applicant has addressed the comments (Env-Wt 311.06(j)).
 - [Avoidance and Minimization Written Narrative](#) or the [Avoidance and Minimization Checklist](#), or your own avoidance and minimization narrative (Env-Wt 311.07).
 - For after-the-fact applications: information required by Env-Wt 311.12.
 - [Coastal Resource Worksheet](#) for coastal projects as required under Env-Wt 600.
 - Prime Wetlands information required under Env-Wt 700. See [WPPT](#) for prime wetland mapping.
- Required Attachments for Minor and Major Projects**
- [Attachment A: Minor and Major Projects](#) (Env-Wt 313.03).
 - [Functional Assessment Worksheet](#) or others means of documenting the results of actions required by Env-Wt 311.10 as part of an application preparation for a standard permit (Env-Wt 311.03(b)(3); Env-Wt 311.03(b)(10)). See [Functional Assessments for Wetlands and Other Aquatic Resources Fact Sheet](#). For shoreline structures, see shoreline structures exemption in Env-Wt 311.03(b)(10)).
- Optional Materials**
- [Stream Crossing Worksheet](#) which summarizes the requirements for stream crossings under Env-Wt 900.
 - Request for [concurrent processing of related shoreland / wetlands permit applications](#) (Env-Wt 313.05).

Wakefield, #2019-M312-1



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1:24,000



Map depicting location of culvert which carries NH 153 over a wetland in Wakefield.

Map created by: Arin Mills on 7/9/2021

Source: S:\Environment\PROJECTS\WAKEFIELD\2019-M312-1

Legend
 Project Location



AVOIDANCE AND MINIMIZATION CHECKLIST
 Water Division/Land Resources Management
 Wetlands Bureau



[Check the Status of your Application](#)

RSA/Rule: RSA 482-A/ Env-Wt 311.07(c)

This checklist can be used in lieu of the written narrative required by Env-Wt 311.07(a) to demonstrate compliance with requirements for Avoidance and Minimization (A/M), pursuant to RSA 482-A:1 and Env-Wt 311.07(c).

For the construction or modification of non-tidal shoreline structures over areas of surface waters without wetland vegetation, complete only Sections 1, 2, and 4 (or the applicable sections in [Attachment A: Minor and Major Projects \(NHDES-W-06-013\)](#)).

The following definitions and abbreviations apply to this worksheet:

- “A/M BMPs” stands for [Wetlands Best Management Practice Techniques for Avoidance and Minimization](#) dated 2019, published by the New England Interstate Water Pollution Control Commission (Env-Wt 102.18).
- “Practicable” means available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes (Env-Wt 103.62).

SECTION 1 - CONTACT/LOCATION INFORMATION		
APPLICANT LAST NAME, FIRST NAME, M.I.: NH Department of Transportation		
PROJECT STREET ADDRESS: NH Route 153	PROJECT TOWN: Wakefield	
TAX MAP/LOT NUMBER: 		
SECTION 2 - PRIMARY PURPOSE OF THE PROJECT		
Env-Wt 311.07(b)(1)	Indicate whether the primary purpose of the project is to construct a water-access structure or requires access through wetlands to reach a buildable lot or the buildable portion thereof.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
<p>If you answered “no” to this question, describe the purpose of the “non-access” project type you have proposed:</p> <p>Replace an existing degraded corrugated metal pipe arch with a pre-cast concrete box structure. The new structure will be approximately the same length as the existing structure, but increases the crossing's hydraulic capacity. Both temporary and permanent impacts will be required.</p>		

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SECTION 3 - A/M PROJECT DESIGN TECHNIQUES		
Check the appropriate boxes below in order to demonstrate that these items have been considered in the planning of the project. Use N/A (not applicable) for each technique that is not applicable to your project.		
Env-Wt 311.07(b)(2)	For any project that proposes new permanent impacts of more than one acre or that proposes new permanent impacts to a Priority Resource Area (PRA), or both, whether any other properties reasonably available to the applicant, whether already owned or controlled by the applicant or not, could be used to achieve the project's purpose without altering the functions and values of any jurisdictional area, in particular wetlands, streams, and PRAs.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A
Env-Wt 311.07(b)(3)	Whether alternative designs or techniques, such as different layouts, construction sequencing, or alternative technologies could be used to avoid impacts to jurisdictional areas or their functions and values.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A
Env-Wt 311.07(b)(4) Env-Wt 311.10(c)(1) Env-Wt 311.10(c)(2)	The results of the functional assessment required by Env-Wt 311.03(b)(10) were used to select the location and design for the proposed project that has the least impact to wetland functions.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A
Env-Wt 311.07(b)(4) Env-Wt 311.10(c)(3)	Where impacts to wetland functions are unavoidable, the proposed impacts are limited to the wetlands with the least valuable functions on the site while avoiding and minimizing impacts to the wetlands with the highest and most valuable functions.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A
Env-Wt 313.01(c)(1) Env-Wt 313.01(c)(2) Env-Wt 313.03(b)(1)	No practicable alternative would reduce adverse impact on the area and environments under the department's jurisdiction and the project will not cause random or unnecessary destruction of wetlands.	<input checked="" type="checkbox"/> Check <input type="checkbox"/> N/A
Env-Wt 313.01(c)(3)	The project would not cause or contribute to the significant degradation of waters of the state or the loss of any PRAs.	<input checked="" type="checkbox"/> Check <input type="checkbox"/> N/A
Env-Wt 313.03(b)(3) Env-Wt 904.07(c)(8)	The project maintains hydrologic connectivity between adjacent wetlands or stream systems.	<input checked="" type="checkbox"/> Check <input type="checkbox"/> N/A
Env-Wt 311.10 A/M BMPs	Buildings and/or access are positioned away from high function wetlands or surface waters to avoid impact.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A
Env-Wt 311.10 A/M BMPs	The project clusters structures to avoid wetland impacts.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A
Env-Wt 311.10 A/M BMPs	The placement of roads and utility corridors avoids wetlands and their associated streams.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A
A/M BMPs	The width of access roads or driveways is reduced to avoid and minimize impacts. Pullouts are incorporated in the design as needed.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A
A/M BMPs	The project proposes bridges or spans instead of roads/driveways/trails with culverts.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A

irm@des.nh.gov or (603) 271-2147

NHDES Wetlands Bureau, 29 Hazen Drive, PO Box 95, Concord, NH 03302-0095

www.des.nh.gov

A/M BMPs	The project is designed to minimize the number and size of crossings, and crossings cross wetlands and/or streams at the narrowest point.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A
Env-Wt 500 Env-Wt 600 Env-Wt 900	Wetland and stream crossings include features that accommodate aquatic organism and wildlife passage.	<input checked="" type="checkbox"/> Check <input type="checkbox"/> N/A
Env-Wt 900	Stream crossings are sized to address hydraulic capacity and geomorphic compatibility.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A
A/M BMPs	Disturbed areas are used for crossings wherever practicable, including existing roadways, paths, or trails upgraded with new culverts or bridges.	<input checked="" type="checkbox"/> Check <input type="checkbox"/> N/A
SECTION 4 - NON-TIDAL SHORELINE STRUCTURES		
Env-Wt 313.03(c)(1)	The non-tidal shoreline structure has been designed to use the minimum construction surface area over surfaces waters necessary to meet the stated purpose of the structure.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A
Env-Wt 313.03(c)(2)	The type of construction proposed for the non-tidal shoreline structure is the least intrusive upon the public trust that will ensure safe navigation and docking on the frontage.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A
Env-Wt 313.03(c)(3)	The non-tidal shoreline structure has been designed to avoid and minimize impacts on the ability of abutting owners to use and enjoy their properties.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A
Env-Wt 313.03(c)(4)	The non-tidal shoreline structure has been designed to avoid and minimize impacts to the public's right to navigation, passage, and use of the resource for commerce and recreation.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A
Env-Wt 313.03(c)(5)	The non-tidal shoreline structure has been designed, located, and configured to avoid impacts to water quality, aquatic vegetation, and wildlife and finfish habitat.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A
Env-Wt 313.03(c)(6)	The non-tidal shoreline structure has been designed to avoid and minimize the removal of vegetation, the number of access points through wetlands or over the bank, and activities that may have an adverse effect on shoreline stability.	<input type="checkbox"/> Check <input checked="" type="checkbox"/> N/A

BUREAU OF ENVIRONMENT CONFERENCE REPORT

SUBJECT: NHDOT Monthly Natural Resource Agency Coordination Meeting

DATE OF CONFERENCE: July 21, 2021

LOCATION OF CONFERENCE: Virtual meeting held via Zoom

ATTENDED BY:

NHDOT

Andrew O’Sullivan
Matt Urban
Mark Hemmerlein
Rebecca Martin
Arin Mills
Samantha Fifield
Maggie Baldwin
Cassandra Burns
Jason Abdulla
Meli Dube
Marc Laurin
Trent Zanes
Tonty King
Sarah Healey
Jennifer Reczek
Kerry Ryan
Tim Boodey

Joseph Jorgens
Jim MacMahon

EPA

Jeanie Brochi

NHDES

Lori Sommer
Karl Benedict
Cheryl Bondi

NHB

Jessica Bouchard

Federal Highway

Jaimie Sikora

The Nature Conservancy

Pete Steckler

LCHIP

Paula Bellemore

**Consultants/ Public
Participants**

Christine Perron
Susan Francher
Tracey Boisvert

PRESENTATIONS/ PROJECTS REVIEWED THIS MONTH: *(minutes on subsequent pages)*

Finalize Meeting Minutes.....	2
New London, 42877, X-A004(976)	2
Dummer-Cambridge-Errol, #16304B (X-A004(699))	4
Eaton Culvert Replacement, #1832-H-1	8
Wakefield Culvert Replacement, # 2019-M312-1.....	10
Middleton, #43067.....	11
Bath, #43247, (X-A005(062)).....	14
Sandwich, #43487	17

Wakefield Culvert Replacement, # 2019-M312-1

Arin Mills, NHDOT Senior Environmental Manager, and Samantha Fifield, District 3 Civil Engineer, presented the proposed state funded culvert replacement project which carries NH 153 over a wetland in Wakefield. A map was shown to depict the drainage area using StreamStats, and Arin further explained the draining was from a series of wetlands that extend over the Maine border. The site is within the Ossipee River headwaters, which reaches from a Belleau Lake to Woodman Lake, Stump Pond, Balch Pond and forms the Ossipee River. The project is adjacent to Woodman Lake and appears to be the local name for the waterbody, as the NWI data does not have a name listed for the waterbody. The surrounding area is primarily soils that are excessively drained.

Arin explained that although the NWI data shows the area of the project as a stream, the field delineation determined the inlet side to be a forested wetland (PFO1F) and the outlet side to be Lacustrine Littoral (L2UB24Hh). Woodman lake is dam controlled with a series of dams; Belleau Lake dame is active/recreational/private, Woodman Lake dam (Chick Dam) is breached, and it is a beaver dam that currently retains water in Woodman Lake. The field delineation did not find stream characteristics at the crossing, but rather Palustrine forested and lacustrine. No previous permits were identified for the location. An aerial map was shown as the area surrounding the site is rural/residential with no conservation lands adjacent. Photographs were shown of the upstream/downstream as well as inlet/outlet.

Sam provided a project overview of the proposed project to replace the existing deteriorated 3' high by 5' wide CMP arch with an 8' wide by 3' high precast concrete box. Both headwalls will be replaced and guardrail will be installed on the pond side to improve safety. Sam explained the crossing does overtop during high rain events. Sam showed preliminary impact plans where the proposed box will match the existing footprint. Sam said the 8' wide concrete box is proposed for both performance and accommodation of wildlife passage. Impact shown are associated with the wider structure. Sam summarized the construction sequence is to install erosion control measures and water diversion, remove the existing culvert and install new from outlet to inlet. The water diversion pipe would then be removed, roadway rebuilt and construct new guardrail. Sam showed proposed erosion control measures.

Arin provided a summary of the environmental review to include the field determination of Palustrine and Lacustrine wetland types and no Priority Resource Area impacts. No additional SWQPA as the project will be covered under the wetlands permit. The site is within the 100-year FEMA floodplain. US Fish & Wildlife Service iPaC determined potential for Northern long-eared bat and a 4(d) concurrence letter was generated. No recorded results from the NHB21-0969 review. Section 106 is complete and an Appendix B under the programmatic agreement is complete. It was noted Belleau Lake is actively controlling Milfoil, and no other invasive species were identified.

Lorie S asked if the lake elevation was known, and what the lake high water level is. Sam said it was not known and Lorie suggested reaching out to the dam bureau and possibly follow-up with Karl ahead of submission to verify Shoreland jurisdiction. Lorie further asked about hydraulics and Sam said the proposed box would double the hydraulic opening to avoid overtopping the road and would have no impact to properties above the inlet. Lorie asked that be included in a narrative with the application, and no mitigation is anticipated as there are no PRAs within project area.

Carol H encouraged installation of a wildlife shelf. She confirmed Belleau lake does have Milfoil and is likely in Woodman lake as well. She suggested the use of a fragment barrier to prevent further spread. She recommended to keep aware of possible Milfoil if identified during construction. Mike H and Genie

B had no comment. Pete S asked if raising the road was considered to reduce flooding and possible use of FEMA funding.

Middleton, #43067

Rich Brereton from FBE introduced the project on behalf of NHDOT Environmental Manager Arin Mills and Ralph “Sandy” Sanders of District 6, which had been presented at the January 2021 NRAM by Arin and Sandy.

Rich presented the project, a culvert replacement where an unnamed stream crosses under NH Route 153 in Middleton. The proposed work includes replacing the existing culvert structures, a 36” corrugated metal pipe (CMP) and a 24” reinforced concrete pipe, with twin 49” span x 29” rise coated pipe arch culverts with end sections. In addition, the project proposes to replace the existing, deteriorating riprap above the inlet and to install 4.5 feet of new riprap to fill a gap between the existing riprap and the new end section on the inlet. NHDOT’s Standard Dredge and Fill Wetlands permit application will include this work.

Next, Rich discusses the construction constraints of this project and selection of the twin pipe arch culvert design. Structure strength is a primary concern due to heavy logging truck traffic. The lack of elevation of the roadway above the streambed limits the height of the structure that can be accommodated. District 6’s selection of a twin pipe arch design achieves sufficient hydraulic capacity with only a 29” rise. Rich then reviewed the natural resources present, noting that a wetland delineation was conducted by NHDOT in spring of 2020. This delineation identified the stream as the only water feature in the direct work area. Draft wetland impacts under the proposed work are limited to the permanent impact of the end sections (8’ on either end) and the 4.5’ of new riprap along the bank above the inlet. Rich noted that dewatering measures will be included on the final erosion control plans along with temporary erosion control measures, likely silt sock around the perimeter.

Pond Elevation Summary Discussion

District 3 contacted DES's Bureau of Dams to determine Chick Dam's maximum impounded elevation and was provided an inspection report that stated that the permanent pool elevation is 555.3' and that the maximum impounded elevation is 559.3', see attached report. Also provided by DES is a Plan showing the Dam's dimensions and elevations, see attached Plan.

Unfortunately, neither the report nor the Plan provided have an elevation datum, so the elevations shown on these documents cannot be compared with the project's site elevations. It is worth noting that the inspection report also states that Chick Dam is a non-menace dam as a breach of the dam would be attenuated in Stump Pond, which is located approximately 1000 feet downstream of Chick Dam. This means that an Emergency Action Plan is not required for this dam.

District 3 also explored the Bureau of Dams' web site to find a reservoir elevation for the impounded area at this location and determined that DES does not have a gauge here. The nearest gage is for Great East Lake, which is located just south of the culvert's site. The following link will take you to the gauging webpage: [Real-Time Data: Mascoma, Suncook, Salmon Falls, Powwow, and Piscataquog River Basins \(state.nh.us\)](https://www.state.nh.us/des/real-time-data/mascoma-suncook-salmon-falls-powwow-and-piscataquog-river-basins)

Additionally, District 3 determined that Chick Dam has been breached and that it is actually a beaver dam that is impounding the pond located on the downstream side of the project area.

As Chick Dam has breached and it is a beaver dam impounding water downstream of the project site, District 3 is comfortable using the Normal High Water elevation of 570' as the permanent pool elevation.

Approved	By	Date

INSPECTION REPORT

To: Steve N. Doyon, P.E.
Administrator Water Resources Section

Subject: Chick Dam, Wakefield, NH, Dam # 241.20

From: Grace Levergood, P.E.
Dam Safety Engineer

Classification: AA

Date: July 22, 2021

PERTINENT DATA:

Date Inspected: July 24, 2000
Town: Wakefield
Waterbody: Chick Pond
Maximum Height: 10 ft.
Overall Length: 20 ft.
Pond Area: 3 acres
Drainage Area: 7.02 sq. mi.
Storage: 6 ac-ft perm (elev=555.3'), 13 ac-ft. max (elev=559.3)
50 - Year Storm: 175 cfs peak inflow, 175 cfs routed outflow
Discharge Capacity: 233 cfs w/ 1' freeboard, 358 cfs - top of the dam/ no operations
500 cfs w/ 1' frbd and two boards removed, 659 cfs top of dam
Type of Construction: Earthen embankment with concrete spillway
Construction Date: 1984, left embankment rebuilt in 1997
Outlet Works: 2 – 7' wide x 9.33' high stoplog bays, crest elev = 550.0'
1 – 5.25'w x 2.5'high head-race which drops into concrete box w/
2 – 12" diameter low-level outlets set at varying inverts.

OWNER/OPERATOR:

Russell Chick
10 Mello Parkway
Danvers, MA 01923
Contact: Mr. Russell Chick

Tel: 603-522-6649(weekends)
781-594-9979 (weeknights)

HYDROLOGY/HYDRAULICS:

The routed 50 -year storm inflow was calculated using the software HydroCAD and the TR-20 curve number method. The 7.02 square mile drainage area was divided into 5 subbasins with two dams (#241.13 & #241.20) modeled upstream. A peak inflow of 175 cfs was routed to an outflow of 175 cfs, with 1.5' of freeboard remaining on the dam. The dam can pass 233 cfs with one foot of freeboard remaining on the dam and 358 cfs with no operations to the top of the dam. With removal of two stoplogs, as noted in the 1996 operation and maintenance plan, the dam can pass 500 cfs with one foot of freeboard and 659 cfs to the top of dam. The headrace

structure with its two low level outlets and headrace overflow was not included in the discharge calculations.

Past studies have listed the 50-year storm inflow to be 550 cfs using the USGS and NEHL methods.

CLASSIFICATION AND JUSTIFICATION: AA

A failure of this dam would not likely cause any appreciable damage downstream. The dam owner maintains a boat dock 100 feet downstream. A breach flow would be attenuated in Stump Pond located approximately 1000 feet downstream of the dam.

EAP STATUS:

An EAP is not required.

OPERATING PROCEDURE:

An operating procedure was submitted to this office in 1997 and found to be acceptable at that time. The dam owner should verify that emergency contact names and phone numbers are current.

INSPECTION RESULTS:

The inspection was conducted as a follow-up to the reconstruction work completed in 1996. Repairs performed in 1996 were checked and appear to have improved the structure. The embankments were well vegetated and maintained. The following deficiencies were noted during the inspection and file review:

1. There was seepage noted at the base of the right retaining wall and the concrete headrace structure.
2. The operation and maintenance plan needs updating.

RECOMMENDATION:

I recommend that DES issue a notice of inspection noting the following items which need attention:

1. Monitor the seepage noted at the base of the right retaining wall and the concrete headrace structure.
2. Update the 1997 operation and maintenance plan. Verify emergency contact names and numbers

LOD (LETTER OF DEFICIENCY)
NOI (NOTICE OF INSPECTION) X

New Hampshire Natural Heritage Bureau NHB DataCheck Results Letter

To: Arin Mills
John O. Morton Building
7 Hazen Drive
Concord, NH 03302-0483

From: NH Natural Heritage Bureau

Date: 3/22/2021 (This letter is valid through 3/22/2022)

Re: Review by NH Natural Heritage Bureau of request dated 3/22/2021

Permit Types: Wetland Standard Dredge & Fill - Major
General Permit

NHB ID: NHB21-0969

Applicant: Arin Mills

Location: Wakefield
Tax Map: DOT ROW, Tax Lot: DOT ROW
Address: carries an un-named stream over NH 153

Proj. Description: Work will replace an existing corrugated metal pipe which carries NH 153 over an un-named stream that leads to a waterbody at the southern end of Belleau Lake. Current work proposes to install a precast concrete box and replace headwalls. Beaver activity is known to occur at this location and the design will take this into consideration. This will revise a previous review NHB19-4087 which has expired.

The NH Natural Heritage database has been checked for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government. We currently have no recorded occurrences for sensitive species near this project area.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

Wakefield 2019-M312-1

Wetland Function-Value Evaluation Form

Total area of wetland 8ac Human made? NO Is wetland part of a wildlife corridor? NO or a "habitat island"? NO
 Adjacent land use Residential develop and forested Distance to nearest roadway or other development Adj.
 Dominant wetland systems present forested wetland Contiguous undeveloped buffer zone present YES
 Is the wetland a separate hydraulic system? NO If not, where does the wetland lie in the drainage basin? adj to the reservoirs
 How many tributaries contribute to the wetland? 1 Wildlife & vegetation diversity/abundance (see attached list)

Wetland I.D. 1
 Latitude 43.62597D Longitude -70.981591
 Prepared by: A Mills Date 6-23-21
 Wetland Impact:
 Type Collect Recreation Area < 1,000 SF.

Evaluation based on:
 Office X Field X
 Corps manual wetland delineation completed? Y X N

Function/Value	Suitability Y/N	Rationale (Reference #)*	Principal Function(s)/Value(s)	Comments
Groundwater Recharge/Discharge	<u>Y</u>	<u>2,4,15</u>		<u>well drained / sandy soils surround site, outlet water body is drain controlled</u>
Floodflow Alteration	<u>Y</u>	<u>5,6,7,8,9,15,18</u>	<u>X</u>	<u>wetland surrounded by well drained soils, hydric soils within wetland w/ thick organic layer</u>
Fish and Shellfish Habitat		<u>1,2</u>		<u>Forested wetland within and above wetland</u>
Sediment/Toxicant Retention	<u>Y</u>	<u>1,3,4,5,8,9,2,6,7</u>	<u>X</u>	<u>Evidence in wetland of sediment trapping-fine mineral material</u>
Nutrient Removal	<u>Y</u>	<u>3,5,6,7,8,9,10,2,11</u>	<u>X</u>	<u>Thick organic layer exists, ponded water, dense woody/ shrub forest vegetation</u>
Production Export	<u>Y</u>	<u>1,2,7,8,9,10,12,14</u>	<u>X</u>	<u>High vegetation density + diversity present, Thick organic layer present</u>
Sediment/Shoreline Stabilization		<u>5</u>		<u>This is a forested wetland, not a stream or waterbody open to forest but no down assoc w/ water course</u>
Wildlife Habitat	<u>Y</u>	<u>4,5,6,8,9,11,13,14,15,19,20,</u>	<u>X</u>	<u>adjacent to residential homes, adj to lake, high diversity of plant community to support wildlife</u>
Recreation		<u>5,6</u>		<u>limited recreation potential within wetland, adj to lake</u>
Educational/Scientific Value				<u>No conservation lands adjacent, limited unique value suitable for educational/scientific value</u>
Uniqueness/Heritage		<u>5,6,16,4</u>		<u>forested wetland, no unique features known</u>
Visual Quality/Aesthetics		<u>2,3,1</u>		<u>no outstanding qualities</u>
ES Endangered Species Habitat				<u>NO RARE SPECIES KNOWN</u>
Other				

Notes: * Refer to backup list of numbered considerations.

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Wakefield 2019-M312-1 City/County: Wakefield Sampling Date: 8-3-21
 Applicant/Owner: DOT State: NH Sampling Point: 1
 Investigator(s): Deidra Benjamin, Ann Mills Section, Township, Range: Wakefield
 Landform (hillslope, terrace, etc.): knoll Local relief (concave, convex, none): convex Slope (%): 107
 Subregion (LRR or MLRA): LRR Lat: 43.638971 Long: -70.981697 Datum: StatePlane
 Soil Map Unit Name: Poscawen gravelly loamy sand, 3-8% slope NWI classification: N/A
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? No Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? No (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

Wetland Hydrology Indicators: Primary Indicators (minimum of one is required; check all that apply) <table style="width:100%; border: none;"> <tr> <td><input type="checkbox"/> Surface Water (A1)</td> <td><input type="checkbox"/> Water-Stained Leaves (B9)</td> </tr> <tr> <td><input type="checkbox"/> High Water Table (A2)</td> <td><input type="checkbox"/> Aquatic Fauna (B13)</td> </tr> <tr> <td><input type="checkbox"/> Saturation (A3)</td> <td><input type="checkbox"/> Marl Deposits (B15)</td> </tr> <tr> <td><input type="checkbox"/> Water Marks (B1)</td> <td><input type="checkbox"/> Hydrogen Sulfide Odor (C1)</td> </tr> <tr> <td><input type="checkbox"/> Sediment Deposits (B2)</td> <td><input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)</td> </tr> <tr> <td><input type="checkbox"/> Drift Deposits (B3)</td> <td><input type="checkbox"/> Presence of Reduced Iron (C4)</td> </tr> <tr> <td><input type="checkbox"/> Algal Mat or Crust (B4)</td> <td><input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)</td> </tr> <tr> <td><input type="checkbox"/> Iron Deposits (B5)</td> <td><input type="checkbox"/> Thin Muck Surface (C7)</td> </tr> <tr> <td><input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)</td> <td><input type="checkbox"/> Other (Explain in Remarks)</td> </tr> <tr> <td><input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)</td> <td></td> </tr> </table>	<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)	<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)	<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)	<input type="checkbox"/> Water Marks (B1)	<input type="checkbox"/> Hydrogen Sulfide Odor (C1)	<input type="checkbox"/> Sediment Deposits (B2)	<input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3)	<input type="checkbox"/> Drift Deposits (B3)	<input type="checkbox"/> Presence of Reduced Iron (C4)	<input type="checkbox"/> Algal Mat or Crust (B4)	<input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6)	<input type="checkbox"/> Iron Deposits (B5)	<input type="checkbox"/> Thin Muck Surface (C7)	<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)	<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)		Secondary Indicators (minimum of two required) <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<input type="checkbox"/> Surface Water (A1)	<input type="checkbox"/> Water-Stained Leaves (B9)																				
<input type="checkbox"/> High Water Table (A2)	<input type="checkbox"/> Aquatic Fauna (B13)																				
<input type="checkbox"/> Saturation (A3)	<input type="checkbox"/> Marl Deposits (B15)																				
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<input type="checkbox"/> Inundation Visible on Aerial Imagery (B7)	<input type="checkbox"/> Other (Explain in Remarks)																				
<input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)																					
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>																				
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 																					
Remarks: 																					

VEGETATION – Use scientific names of plants.

Sampling Point: _____

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>White Pine (Pinus strobus)</u>	<u>75</u>	<u>Y</u>	<u>FACU</u>
2. <u>Red Maple (Acer rubrum)</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>
3. <u>Beech (Fagus grandifolia)</u>	<u>50</u>	<u>Y</u>	<u>FAC</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

Sapling/Shrub Stratum (Plot size: <u>15</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Red Oak (Quercus rubra)</u>	<u>10</u>	_____	<u>FACU</u>
2. <u>White Pine (Pinus strobus)</u>	<u>30</u>	<u>Y</u>	<u>FACU</u>
3. <u>Beech (Fagus grandifolia)</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>
4. <u>Schub Oak (Quercus ilicifolia)</u>	<u>5</u>	_____	<u>NA</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____

Herb Stratum (Plot size: <u>5</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Broken fern (Pteridium aquilinum)</u>	<u>10</u>	_____	<u>FACU</u>
2. <u>Lowbush blueberry (Vaccinium)</u>	<u>20</u>	<u>Y</u>	<u>FACU</u>
3. <u>Sarsaparilla (Aralia nudicaulis)</u>	<u>40</u>	<u>Y</u>	<u>FACU</u>
4. <u>Canada Mayflower (Maianthemum canadense)</u>	<u>5</u>	_____	<u>FAC</u>
5. <u>Traberry (Gaultheria procumbens)</u>	<u>5</u>	_____	<u>FACU</u>
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
12. _____	_____	_____	_____

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
_____	_____	_____	_____

Remarks: (Include photo numbers here or on a separate sheet.)

30/20 rule

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 7 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: .29 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = _____
FACW species <u>0</u>	x 2 = _____
FAC species <u>90</u>	x 3 = _____
FACU species <u>130</u>	x 4 = _____
UPL species _____	x 5 = _____
Column Totals: _____ (A)	_____ (B)

Prevalence Index = B/A = _____

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Vegetation Strata:

Tree – Woody plants 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/shrub – Woody plants less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vines – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes _____ No _____

WETLAND DETERMINATION DATA FORM – Northcentral and Northeast Region

Project/Site: Wakefield 2019-H312-1 City/County: Wakefield Sampling Date: 8-3-21
 Applicant/Owner: DOT State: VA Sampling Point: 2
 Investigator(s): Deidra Benjamin, Arin Mills Section, Township, Range: Wakefield
 Landform (hillslope, terrace, etc.): depression Local relief (concave, convex, none): none Slope (%): 0
 Subregion (LRR or MLRA): LRR Lat: 43.638971 Long: -70.981697 Datum: State Plane
 Soil Map Unit Name: Poconowen gravelly loamy sand 3-8% slope NWI classification: PFO1F
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes No
 Are Vegetation , Soil , or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, optional Wetland Site ID: _____
Remarks: (Explain alternative procedures here or in a separate report.) 	

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators</u> (minimum of one is required; check all that apply)</p> <input checked="" type="checkbox"/> Surface Water (A1) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input checked="" type="checkbox"/> High Water Table (A2) <input checked="" type="checkbox"/> Aquatic Fauna (B13) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Marl Deposits (B15) <input checked="" type="checkbox"/> Water Marks (B1) <input checked="" type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Sediment Deposits (B2) <input checked="" type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Drift Deposits (B3) <input checked="" type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Iron Deposits (B5) <input checked="" type="checkbox"/> Thin Muck Surface (C7) <input checked="" type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8)	<p><u>Secondary Indicators</u> (minimum of two required)</p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Drainage Patterns (B10) <input checked="" type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input checked="" type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<p>Field Observations:</p> Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>0-10"</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>Surface</u> Saturation Present? (includes capillary fringe) Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>Surface</u>	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: 	
Remarks: <p align="center"><u>Large recent rain events atypical for mid-summer</u></p>	

VEGETATION – Use scientific names of plants.

Sampling Point: 2

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status	
1. <u>Red Maple (Acer rubrum)</u>	<u>40</u>	<u>Y</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>6</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>100%</u> (A/B)
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>40</u> = Total Cover				Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>61</u> x 1 = <u>61</u> FACW species <u>96</u> x 2 = <u>192</u> FAC species <u>65</u> x 3 = <u>195</u> FACU species <u>0</u> x 4 = _____ UPL species <u>0</u> x 5 = _____ Column Totals: <u>222</u> (A) <u>748</u> (B) Prevalence Index = B/A = <u>3.37</u>
Sapling/Shrub Stratum (Plot size: <u>15</u>)				
1. <u>Speckled Alder (Alnus incana)</u>	<u>60</u>	<u>Y</u>	<u>FACW</u>	
2. <u>Red Maple (Acer rubrum)</u>	<u>25</u>	<u>Y</u>	<u>FAC</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
<u>85</u> = Total Cover				
Herb Stratum (Plot size: <u>5</u>)				
1. <u>Royal Fern (Osmunda regalis)</u>	<u>60</u>	<u>Y</u>	<u>OBL</u>	
2. <u>Sensitive Fern (Onoclea sensibilis)</u>	<u>35</u>	<u>Y</u>	<u>FACW</u>	
3. <u>Grass spp. (Poa spp)</u>	<u>25</u>	<u>Y</u>		
4. <u>Boneset (Eupatorium perfoliatum)</u>	<u>1</u>		<u>FACW/OBL</u>	
5. <u>IRIS pseudacorus</u>	<u>1</u>		<u>OBL</u>	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
12. _____	_____	_____	_____	
<u>122</u> = Total Cover				
Woody Vine Stratum (Plot size: _____)				
1. _____	_____	_____	_____	
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
_____ = Total Cover				
Remarks: (Include photo numbers here or on a separate sheet.)				Hydrophytic Vegetation Present? Yes <u>Y</u> No _____

Summary of HydroCAD Analysis

A HydroCAD model was created to evaluate both the existing and the proposed culverts' performance using the following information and data:

- The catchment areas were originally delineated by Streamstats (shapefile). This area was then revised using USGS maps and engineering judgement. Time of concentration was calculated based on the information provided on the USGS map and the latest aerials for surface cover.
- A soil map was developed using the USDA soils survey website. The catchment area shape file downloaded from the StreamStats website was used to delineate the area, see attached soils report. A soils shapefile was imported into Microstation and the CN value used in the drainage model was calculated using information within the catchment area delineated using engineering judgment. Saturated conditions were selected when calculating the CN (D values were used for A/D, B/D, and C/D soils), creating a conservative estimate of runoff.
- 24-hour Extreme Precipitation Estimates from the Northeast Regional Climate Center were inputted into the HydroCAD model to evaluate this crossing for multiple storms, see attached precipitation tables.
- A topographic survey was completed at this location, so culvert elevations reflect surveyed data. USGS elevation data supplemented the remaining input data within the HydroCADD model. The flood elevation of the roadway is at 574.38.

The table below contains the results of the HydroCAD analysis performed on the **existing** crossing:

Storm Year	24-Hr Precipitation (in)	Peak Flow (cfs) through Culvert	Peak Elevation (ft)	Freeboard to Overtop Road (ft)
2	3.0	3.96	570.09	4.29
5	3.74	13.74	570.71	3.67
10	4.43	29.49	571.49	2.89
25	5.53	65.08	573.51	0.87
50	6.54	107.43	574.69	0.31 above the road
100	7.75	168.23	575.09	0.71' above the road
Metadata	6.20	92.4	574.55	0.17' above the road

As can be seen in the above table, the existing culvert does not have the capacity to pass flow from an estimated 50-year or 100-year storm events without overtopping the road, using NRCC's extreme precipitation storm data estimates.

The table below contains the results for the HydroCAD analysis performed on the **proposed** crossing:

Storm Year	24-Hr Precipitation (in)	Peak Flow (cfs) through Culvert	Peak Elevation (ft)	Freeboard to Overtop Road (ft)
2	3.00	3.95	570.76	3.62
5	3.74	13.74	571.16	3.22
10	4.43	29.49	571.63	2.75
25	5.53	65.08	572.49	1.9
50	6.54	107.43	573.30	1.08
100	7.75	168.23	574.33	0.05
Metadata	6.20	92.4	573.02	1.36

As can be seen above, the results of the analysis demonstrated that the proposed culvert has the capacity to allow for the estimated 100-year storm flow without overtopping the road, significantly increasing the crossing's capacity.

New Hampshire Natural Heritage Bureau NHB DataCheck Results Letter

To: Arin Mills
John O. Morton Building
7 Hazen Drive
Concord, NH 03302-0483

From: NH Natural Heritage Bureau

Date: 3/22/2021 (This letter is valid through 3/22/2022)

Re: Review by NH Natural Heritage Bureau of request dated 3/22/2021

Permit Types: Wetland Standard Dredge & Fill - Major
General Permit

NHB ID: NHB21-0969

Applicant: Arin Mills

Location: Wakefield
Tax Map: DOT ROW, Tax Lot: DOT ROW
Address: carries an un-named stream over NH 153

Proj. Description: Work will replace an existing corrugated metal pipe which carries NH 153 over an un-named stream that leads to a waterbody at the southern end of Belleau Lake. Current work proposes to install a precast concrete box and replace headwalls. Beaver activity is known to occur at this location and the design will take this into consideration. This will revise a previous review NHB19-4087 which has expired.

The NH Natural Heritage database has been checked for records of rare species and exemplary natural communities near the area mapped below. The species considered include those listed as Threatened or Endangered by either the state of New Hampshire or the federal government. We currently have no recorded occurrences for sensitive species near this project area.

A negative result (no record in our database) does not mean that a sensitive species is not present. Our data can only tell you of known occurrences, based on information gathered by qualified biologists and reported to our office. However, many areas have never been surveyed, or have only been surveyed for certain species. An on-site survey would provide better information on what species and communities are indeed present.

New Hampshire Natural Heritage Bureau
NHB DataCheck Results Letter

MAP OF PROJECT BOUNDARIES FOR: NHB21-0969





United States Department of the Interior



FISH AND WILDLIFE SERVICE
New England Ecological Services Field Office
70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>

In Reply Refer To:

April 01, 2021

Consultation Code: 05E1NE00-2021-SLI-2153

Event Code: 05E1NE00-2021-E-06784

Project Name: Wakefield Culvert Replacement, 2019-M312-1

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>;

<http://www.towerkill.com>; and

<http://>

www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New England Ecological Services Field Office

70 Commercial Street, Suite 300

Concord, NH 03301-5094

(603) 223-2541

Project Summary

Consultation Code: 05E1NE00-2021-SLI-2153

Event Code: 05E1NE00-2021-E-06784

Project Name: Wakefield Culvert Replacement, 2019-M312-1

Project Type: TRANSPORTATION

Project Description: This is a project to replace a deteriorating culvert which carries NH Route 153 over an un-named stream in Wakefield, NH. The project will replace the existing corrugated metal pipe, replace the culvert headwalls, install anti-beaver measures into the final structure, and install guardrail on the outlet (westerly) side of Route 153. Previous Consultation Code 05E1NE00-2020-SLI-0854 from June 25, 2020.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.638790650000004,-70.98162453741125,14z>



Counties: Carroll County, New Hampshire

Endangered Species Act Species

There is a total of 1 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.



United States Department of the Interior



FISH AND WILDLIFE SERVICE
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70 Commercial Street, Suite 300
Concord, NH 03301-5094
Phone: (603) 223-2541 Fax: (603) 223-0104
<http://www.fws.gov/newengland>

IPaC Record Locator: 714-100804753

April 01, 2021

Subject: Consistency letter for the 'Wakefield Culvert Replacement, 2019-M312-1' project indicating that any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o).

Dear Arin Mills:

The U.S. Fish and Wildlife Service (Service) received on April 01, 2021 your effects determination for the 'Wakefield Culvert Replacement, 2019-M312-1' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. You indicated that no Federal agencies are involved in funding or authorizing this Action. This IPaC key assists users in determining whether a non-Federal action may cause “take”^[1] of the northern long-eared bat that is prohibited under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the Action is not likely to result in unauthorized take of the northern long-eared bat.

Please report to our office any changes to the information about the Action that you entered into IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation.

If your Action proceeds as described and no additional information about the Action’s effects on species protected under the ESA becomes available, no further coordination with the Service is required with respect to the northern long-eared bat.

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

Wakefield Culvert Replacement, 2019-M312-1

2. Description

The following description was provided for the project 'Wakefield Culvert Replacement, 2019-M312-1':

This is a project to replace a deteriorating culvert which carries NH Route 153 over an un-named stream in Wakefield, NH. The project will replace the existing corrugated metal pipe, replace the culvert headwalls, install anti-beaver measures into the final structure, and install guardrail on the outlet (westerly) side of Route 153. Previous Consultation Code 05E1NE00-2020-SLI-0854 from June 25, 2020.

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@43.638790650000004,-70.98162453741125,14z>



Determination Key Result

This non-Federal Action may affect the northern long-eared bat; however, any take of this species that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o).

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on **May 15, 2017**. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for non-Federal actions is to assist determinations as to whether proposed actions are excepted from take prohibitions under the northern long-eared bat 4(d) rule.

If a non-Federal action may cause prohibited take of northern long-eared bats or other ESA-listed animal species, we recommend that you coordinate with the Service.

Determination Key Result

Based upon your IPaC submission, any take of the northern long-eared bat that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o).

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?

No

2. Will your activity purposefully **Take** northern long-eared bats?

No

3. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?

Automatically answered

No

4. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html.

Yes

5. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?

No

6. Will the action involve Tree Removal?

Yes

7. Will the action only remove hazardous trees for the protection of human life or property?

No

8. Will the action remove trees within 0.25 miles of a known northern long-eared bat hibernaculum at any time of year?

No

9. Will the action remove a known occupied northern long-eared bat maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31?

No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.

1. Estimated total acres of forest conversion:

0.1

2. If known, estimated acres of forest conversion from April 1 to October 31

0.1

3. If known, estimated acres of forest conversion from June 1 to July 31

0.1

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

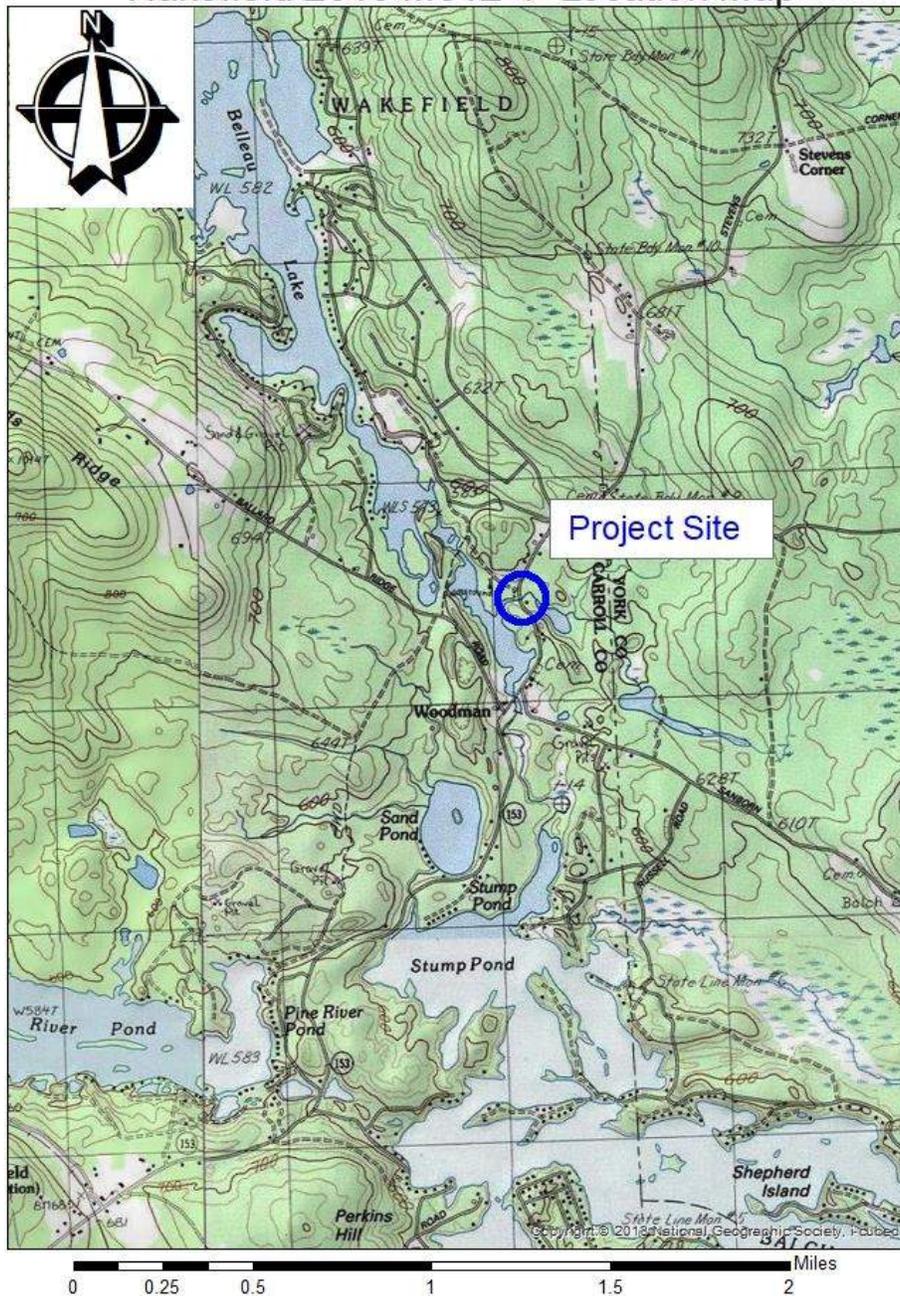
0

Proposed Operations Projects – NHDOT Cultural Resources Review

For the purpose of compliance with regulations of the National Historic Preservation Act, the Advisory Council on Historic Preservation's *Procedures for the Protection of Historic Properties* (36 CFR 800), the US Army Corps of Engineers' *Appendix C*, and/or state regulation RSA 227-C:9, *Directive for Cooperation in the Protection of Historic Resources*, the NHDOT Cultural Resources Program has reviewed the proposed project for potential impacts to historic properties.

Proposed project: The proposed project will replace a deteriorated culvert located on NH Route 153 in Wakefield, NH. The project will replace the existing corrugated metal pipe in-kind, replace the culvert headwalls, install anti-beaver measures in the final structure, and install guardrail on the outlet (westerly) side of NH Route 153.

Wakefield 2019 M312-1 Location Map



Above Ground Review

Known/approximate age of structure:

There are no available highway plans of this section of NH Route 153 and District 3 does not know the date of the culvert constructions.

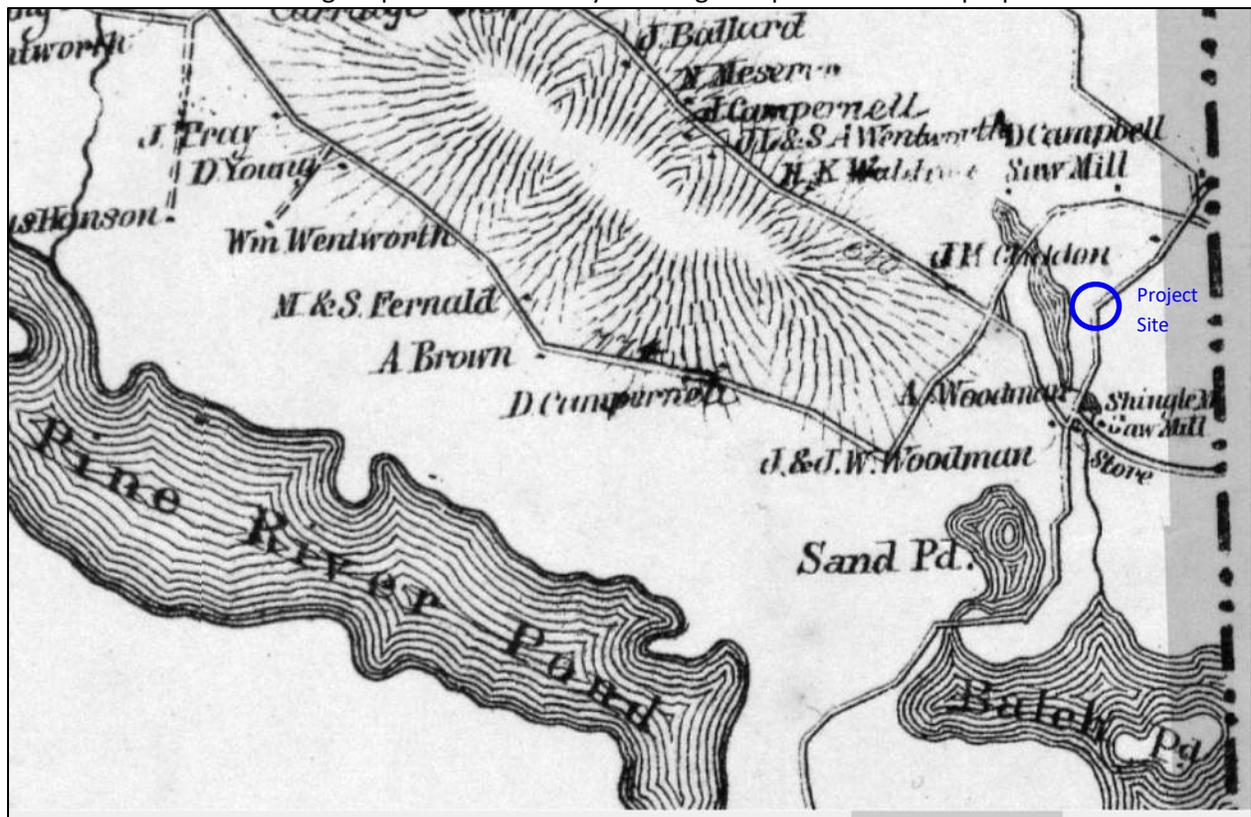
Inlet on east side of Route 153



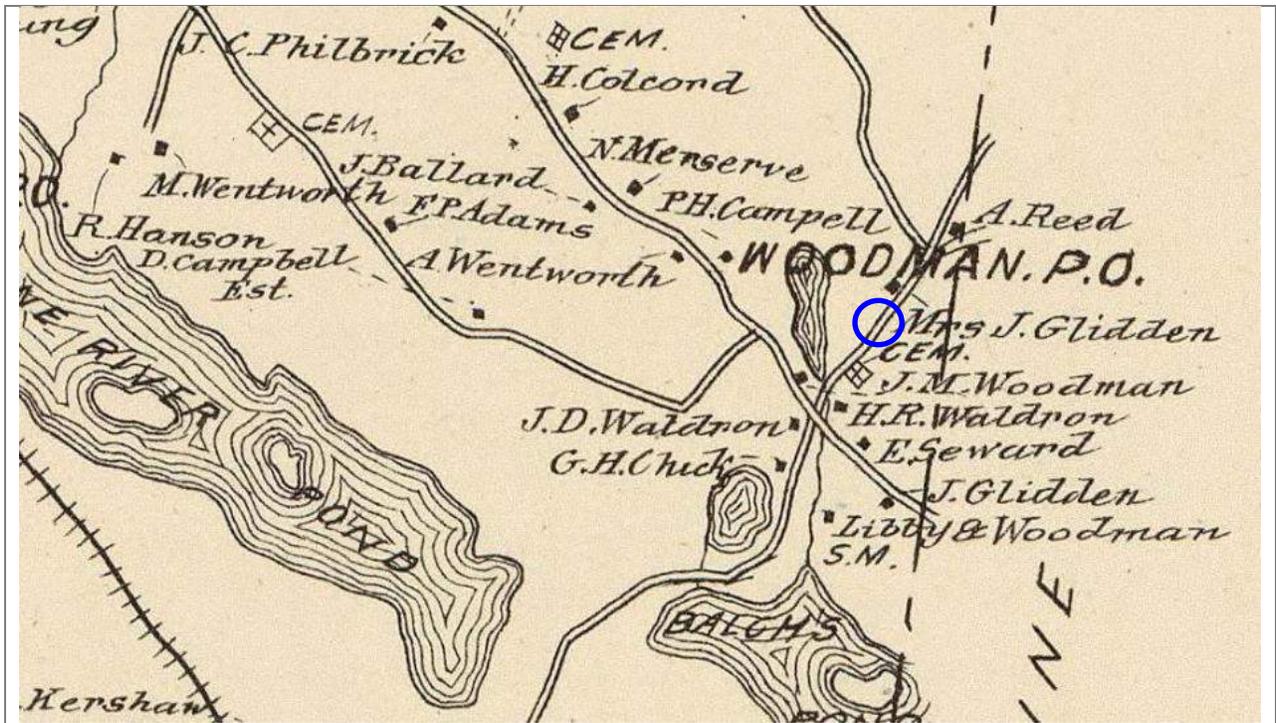
Outlet on west side of Route 153



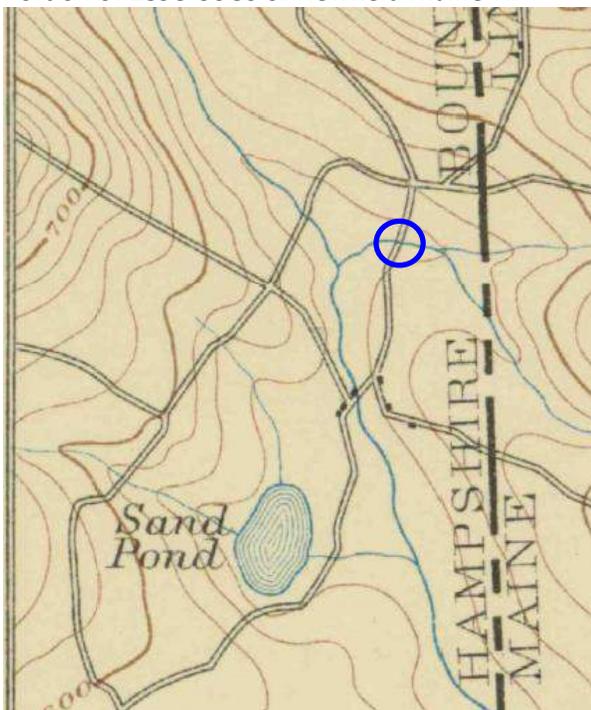
Portion of 1861 Walling Map of Carroll County showing occupation near the proposed work site.



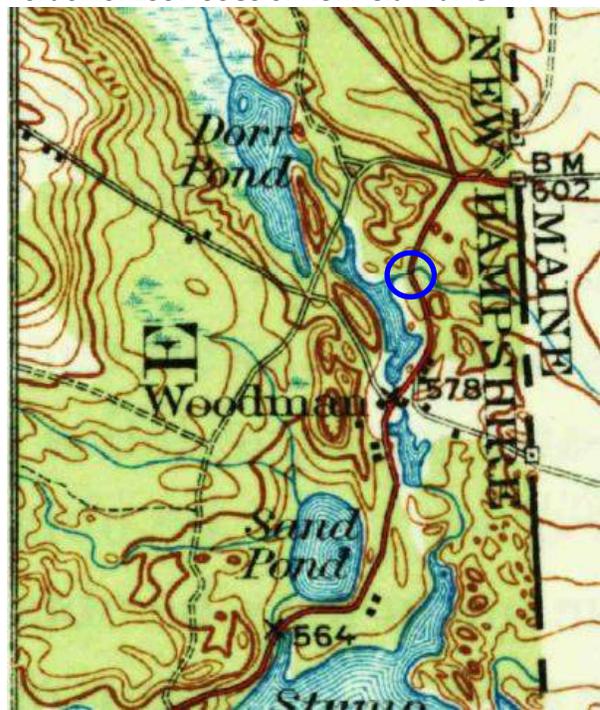
Portion of the 1892 Hurd & Company Map of Wakefield, NH



Portion of 1898 USGS of Newfield Maine-NH

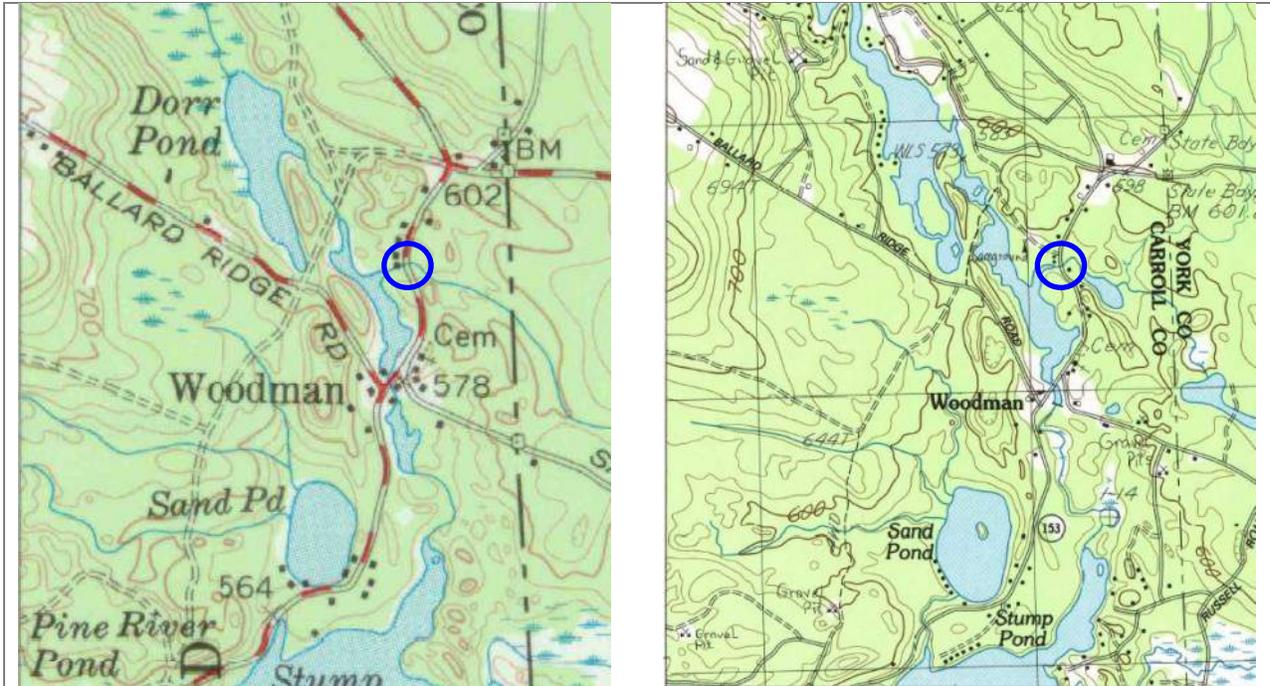


Portion of 1937 USGS of Newfield Maine-NH



Portion of 1958 USGS of Newfield Maine-NH

Portion of 1983 USGS of Newfield Maine-NH



No Potential to Cause Effect/No Concerns

This corrugated steel plate Arch culvert is half-circular, with rectangular cut stone block headwalls. Plate arch technology was introduced c.1930s (Harshbarger 2017:6-96), and when they postdate 1945 steel plate arches bridges are a post-1945 Section 106 excluded bridge type under the Programmatic Comment (Harshbarger 2017:6-99). According to NHDOT data, only 15 steel plate arch bridges and culverts predate 1945 (Harshbarger 2017:6-96). As such, it is unlikely this culvert pre-dates 1945, and thus the cultural resource staff has no concerns with its in kind replacement.

Concerns:

Below Ground Review

Recorded Archaeological site: Yes No

Nearest Recorded Archaeological Site Name & Number: 27-CA-0169 Alfred Woodman Mill Site

Pre-Contact Post-Contact

Distance from Project Area: 1927 ft south of project area

No Potential to Cause Effect/No Concerns

Although this crossing appears as early as 1861, the proposed replacement in kind will primarily be focused on the previously disturbed footprint, so there are no concerns.

Concerns:

Project: Wakefield 2019 M312-1

Reviewed by:

Sheila Charles

7/13/2020

NHDOT Cultural Resources Staff

Date:

Section 106 Programmatic Agreement – Cultural Resources Review Effect Finding

Appendix B Certification – Activities with Minimal Potential to Cause Effects

Date Reviewed:
(Desktop or Field Review Date)

7/13/2020

This Project uses only State funding; however project activities listed below comply with the PA.

Project Name:

Wakefield Culvert Replacement

State Number:

2019-M312-1

FHWA Number: N/A

Environmental Contact:

Arin Mills

DOT

Email Address:

Arin.mills@dot.nh.us

Project Manager: [Click here to enter text.](#)

Project Description:

Replace the existing corrugated metal pipe which carries an un-named stream under NH 153 in kind. Replace culvert headwalls and incorporate anti beaver dam measures into the final structure. Install guardrail on the outlet side of the culvert due to deep standing water.

Please select the applicable activity/activities:

Highway and Roadway Improvements	
<input type="checkbox"/>	1. Modernization and general highway maintenance that may require additional highway right-of-way or easement , including: Choose an item. Choose an item.
<input type="checkbox"/>	2. Installation of rumble strips or rumble stripes
<input type="checkbox"/>	3. Installation or replacement of pole-mounted signs
<input type="checkbox"/>	4. Guardrail replacement, provided any extension does not connect to a bridge older than 50 years old (unless it does already), and there is no change in access associated with the extension
Bridge and Culvert Improvements	
<input checked="" type="checkbox"/>	5. Culvert replacement (excluding stone box culverts), when the culvert is less than 60" in diameter and excavation for replacement is limited to previously disturbed areas
<input type="checkbox"/>	6. Bridge deck preservation and replacement, as long as no character defining features are impacted
<input type="checkbox"/>	7. Non-historic bridge and culvert maintenance, renovation, or total replacement, that may require minor additional right-of-way or easement , including: Choose an item. Choose an item.
<input type="checkbox"/>	8. Historic bridge maintenance activities within the limits of existing right-of-way, including: Choose an item. Choose an item.
<input type="checkbox"/>	9. Stream and/or slope stabilization and restoration activities (including removal of debris or sediment obstructing the natural waterway, or any non-invasive action to restore natural conditions)
Bicycle and Pedestrian Improvements	
<input type="checkbox"/>	10. Construction of pedestrian walkways, sidewalks, sidewalk tip-downs, small passenger shelters, and alterations to facilities or vehicles in order to make them accessible for elderly and handicapped persons
<input type="checkbox"/>	11. Installation of bicycle racks
<input type="checkbox"/>	12. Recreational trail construction
<input type="checkbox"/>	13. Recreational trail maintenance when done on existing alignment
<input type="checkbox"/>	14. Construction of bicycle lanes and shared use paths and facilities within the existing right-of-way
Railroad Improvements	
<input type="checkbox"/>	15. Modernization, maintenance, and safety improvements of railroad facilities within the existing railroad or highway right-of-way, provided no historic railroad features are impacted , including, but not limited to: Choose an item.

Section 106 Programmatic Agreement – Cultural Resources Review Effect Finding

Appendix B Certification – Activities with Minimal Potential to Cause Effects

	Choose an item.
<input type="checkbox"/>	16. In-kind replacement of modern railroad features (i.e. those features that are less than 50 years old)
<input type="checkbox"/>	17. Modernization/modification of railroad/roadway crossings provided that all work is undertaken within the limits of the roadway structure (edge of roadway fill to edge of roadway fill) and no associated character defining features are impacted
Other Improvements	
<input type="checkbox"/>	18. Installation of Intelligent Transportation Systems
<input type="checkbox"/>	19. Acquisition or renewal of scenic, conservation, habitat, or other land preservation easements where no construction will occur
<input type="checkbox"/>	20. Rehabilitation or replacement of existing storm drains.
<input type="checkbox"/>	21. Maintenance of stormwater treatment features and related infrastructure

Please describe how this project is applicable under Appendix B of the Programmatic Agreement.

It is determined the steel plate arch culvert was likely constructed after 1945 and therefore is excluded under the post-1945 Section 106 bridge type under the Programmatic Comment. Work will be in a previously disturbed footprint therefore concerns for below ground resources are not a concern.

Please submit this Certification Form along with the Transportation RPR, including photographs, USGS maps, design plans and as-built plans, if available, for review. Note: The RPR can be waived for in-house projects, please consult Cultural Resources Program Staff.

Coordination Efforts:

Has an RPR been submitted to NHDOT for this project?	Not Applicable	NHDHR R&C # assigned?	Click here to enter text.
Please identify public outreach effort contacts; method of outreach and date:	None		

Finding: (To be filled out by NHDOT Cultural Resources Staff)

<input checked="" type="checkbox"/>	No Potential to Cause Effects	<input type="checkbox"/>	No Historic Properties Affected
This finding serves as the Section 106 Memorandum of Effect. No further coordination is necessary.			
<input type="checkbox"/>	This project does not comply with Appendix B. Review will continue under Stipulation VII of the Programmatic Agreement. Please contact NHDOT Cultural Resources Staff to determine next steps.		
NHDOT comments:			
		7/14/2020	
			
_____ NHDOT Cultural Resources Staff		_____ Date	

Coordination of the Section 106 process should begin as early as possible in the planning phase of the project (undertaking) so as not to cause a delay.

Section 106 Programmatic Agreement – Cultural Resources Review Effect Finding

Appendix B Certification – Activities with Minimal Potential to Cause Effects

Project sponsors should not predetermine a Section 106 finding under the assumption a project is limited to the activities listed in Appendix B until this form is signed by the NHDOT Bureau of Environment Cultural Resources Program staff.

Every project shall be coordinated with, and reviewed by the NHDOT-BOE Cultural Resources Program in accordance with the *Programmatic Agreement Among the Federal Highway Administration, the New Hampshire State Historic Preservation Office, the Army Corps of Engineers, New England District, the Advisory Council on Historic Preservation, and the New Hampshire Department of Transportation Regarding the Federal Aid Highway Program in New Hampshire*. In accordance with the Advisory Council's regulations, we will continue to consult, as appropriate, as this project proceeds.

NHDOT and the State Historic Preservation Office may use provisions of the Programmatic Agreement to address the applicable requirements of NH RSA 227-C:9 in the location, identification, evaluation and management of historic resources, for projects funded by State funds.

If any portion of the project is not entirely limited to any one or a combination of the activities specified in Appendix B (with, or without the inclusion of any activities listed in Appendix A), please continue discussions with NHDOT Cultural Resources staff.

This No Potential to Cause Effect or No Historic Properties Affected project determination is your Section 106 finding, as defined in the Programmatic Agreement.

Should project plans change, please inform the NHDOT Cultural Resources staff in accordance with Stipulation VII of the Programmatic Agreement.



**US Army Corps
of Engineers**®
New England District

**New Hampshire General Permits (GPs)
Appendix B - Corps Secondary Impacts Checklist
(for inland wetland/waterway fill projects in New Hampshire)**

1. Attach any explanations to this checklist. Lack of information could delay a Corps permit determination.
2. All references to “work” include all work associated with the project construction and operation. Work includes filling, clearing, flooding, draining, excavation, dozing, stumping, etc.
3. See GC 5, regarding single and complete projects.
4. Contact the Corps at (978) 318-8832 with any questions.

1. Impaired Waters	Yes	No
1.1 Will any work occur within 1 mile upstream in the watershed of an impaired water? See http://des.nh.gov/organization/divisions/water/wmb/section401/impaired_waters.htm to determine if there is an impaired water in the vicinity of your work area.*		X
2. Wetlands	Yes	No
2.1 Are there are streams, brooks, rivers, ponds, or lakes within 200 feet of any proposed work?	X	
2.2 Are there proposed impacts to SAS, special wetlands. Applicants may obtain information from the NH Department of Resources and Economic Development Natural Heritage Bureau (NHB) DataCheck Tool for information about resources located on the property at https://www2.des.state.nh.us/nhb_datacheck/ . The book Natural Community Systems of New Hampshire also contains specific information about the natural communities found in NH.		X
2.3 If wetland crossings are proposed, are they adequately designed to maintain hydrology, sediment transport & wildlife passage?	X	
2.4 Would the project remove part or all of a riparian buffer? (Riparian buffers are lands adjacent to streams where vegetation is strongly influenced by the presence of water. They are often thin lines of vegetation containing native grasses, flowers, shrubs and/or trees that line the stream banks. They are also called vegetated buffer zones.)		X
2.5 The overall project site is more than 40 acres?		X
2.6 What is the area of the previously filled wetlands?		
2.7 What is the area of the proposed fill in wetlands?		
2.8 What is the % of previously and proposed fill in wetlands to the overall project site?		
3. Wildlife	Yes	No
3.1 Has the NHB & USFWS determined that there are known occurrences of rare species, exemplary natural communities, Federal and State threatened and endangered species and habitat, in the vicinity of the proposed project? (All projects require an NHB ID number & a USFWS IPAC determination.) NHB DataCheck Tool: https://www2.des.state.nh.us/nhb_datacheck/ USFWS IPAC website: https://ecos.fws.gov/ipac/location/index		X

3.2 Would work occur in any area identified as either “Highest Ranked Habitat in N.H.” or “Highest Ranked Habitat in Ecological Region”? (These areas are colored magenta and green, respectively, on NH Fish and Game’s map, “2010 Highest Ranked Wildlife Habitat by Ecological Condition.”) Map information can be found at: <ul style="list-style-type: none"> • PDF: www.wildlife.state.nh.us/Wildlife/Wildlife_Plan/highest_ranking_habitat.htm. • Data Mapper: www.granit.unh.edu. • GIS: www.granit.unh.edu/data/downloadfreedata/category/databycategory.html. 		X
3.3 Would the project impact more than 20 acres of an undeveloped land block (upland, wetland/waterway) on the entire project site and/or on an adjoining property(s)?		X
3.4 Does the project propose more than a 10-lot residential subdivision, or a commercial or industrial development?		X
3.5 Are stream crossings designed in accordance with the GC 21?	N/A	
4. Flooding/Floodplain Values	Yes	No
4.1 Is the proposed project within the 100-year floodplain of an adjacent river or stream?	X	
4.2 If 4.1 is yes, will compensatory flood storage be provided if the project results in a loss of flood storage?		X
5. Historic/Archaeological Resources		
For a minimum, minor or major impact project - a copy of the Request for Project Review (RPR) Form (www.nh.gov/nhdhr/review) with your DES file number shall be sent to the NH Division of Historical Resources as required on Page 11 GC 8(d) of the GP document**	X	

*Although this checklist utilizes state information, its submittal to the Corps is a Federal requirement.

** If your project is not within Federal jurisdiction, coordination with NH DHR is not required under Federal law.



Photo 1: Looking South Down NH 153 Toward Woodman (Wakefield Center)



Photo 2: Looking North Down NH 153 Toward Province Lake

WAKEFIELD, Project #2019-M312-1



Photo 3: Looking East From NH 153 / Inlet



Photo 4: Looking West at NH 153 / Inlet



Photo 5: Looking West From NH 153 / Outlet



Photo 6: Looking East at NH 153 / Outlet



Photo 7: Looking West at Palustrine Wetland Adjacent to Inlet

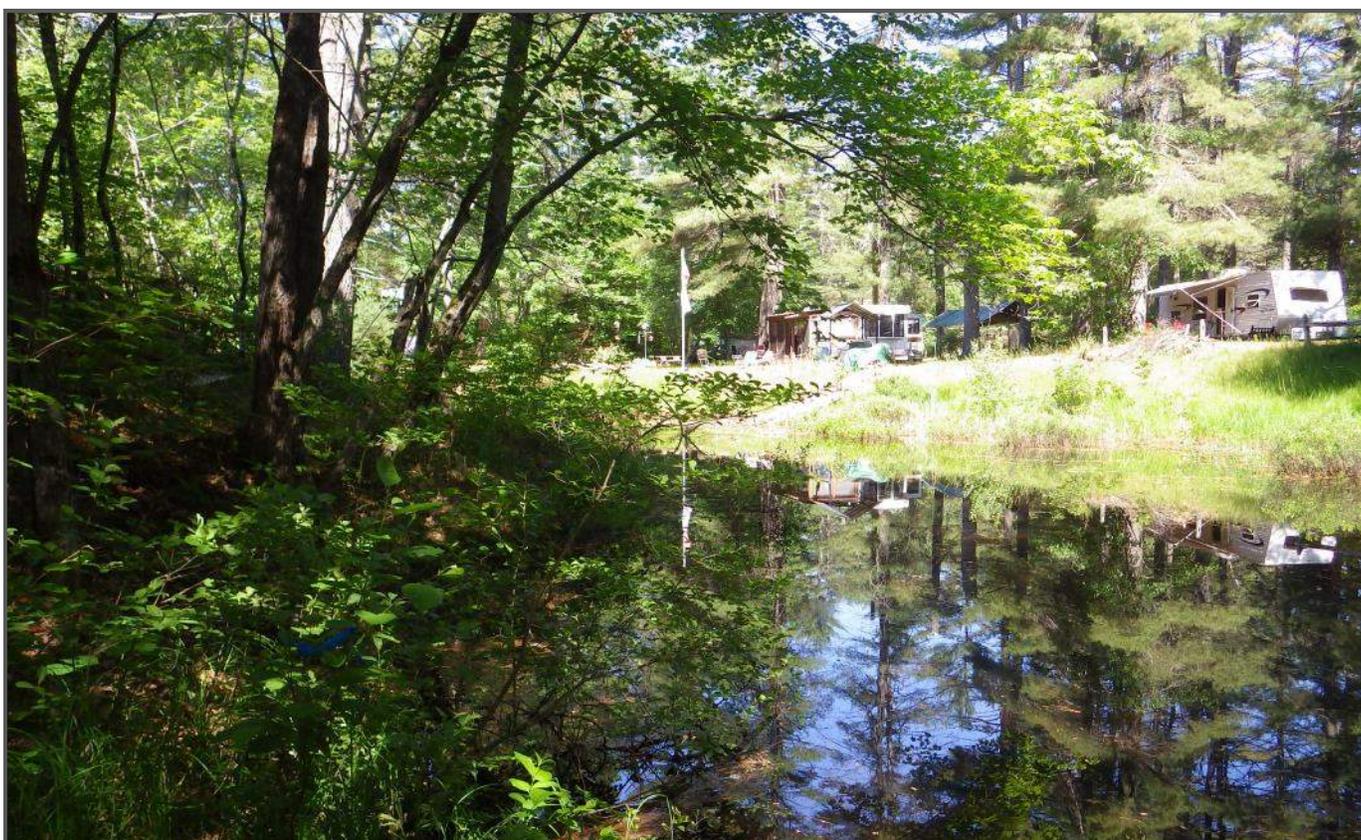


Photo 8: Looking West at Lake Adjacent to Outlet

CONSTRUCTION SEQUENCE

As a preventative measure, erosion control measures, such as silt fence, compost sock, and hay bales, will be placed parallel to the roadway, between the proposed work area and designated wet areas ahead of all construction activities.

The installation of the proposed box culvert will take place during low flow conditions, which is primarily in the summer/early fall months. All erosion control measures will be installed, monitored, repaired or replaced as needed to maintain water quality. These measures will not be removed until all impacted areas are stabilized. Work will be completed in 3 Steps.

Step 1 - Install the Water Diversion Structure (Clean Water Bypass, CWB)

A 24-inch diameter pipe will be used as a CWB so that the new permanent box culvert may be constructed at the same location as the existing corrugated metal pipe arch culvert. The following summarizes the work to be completed during this step:

1. Install turbidity curtains on the upstream and downstream sides of the CWB pipe; the curtains should be placed to prevent any fines from entering into the existing pipe arch culvert or into the downstream pond.
2. Install sand bag cofferdams, to dewater the site, on the upstream and downstream sided of the CWB pipe within the area contained by the turbidity curtains.
3. Place a sediment basin on the either the upstream or downstream side of the roadway; locate the basin a minimum of 20-feet from any delineated wetland.
4. Connect the dewatering sump pump to the sediment basin and dewater the site.
5. Install the water diversion structure pipe using alternating two-way traffic patterns with flaggers; construct the pipe from the downstream side to the upstream side. This is a clean water bypass and does not require treatment. The clean water bypass pipe will be set at an elevation 1-foot above the existing pipe arch culvert.
6. Remove the upstream and downstream sump pump, sand bag cofferdam, and turbidity curtain.

Flow will not be allowed through the temporary water diversion until all erosion control measures are in place for the CWB pipe and the ground is stabilized for flow.

Step 2: Install Culvert

The precast box culvert will be installed in two phases. It will be installed from the downstream side to the upstream side:

1. Install both the downstream and upstream turbidity curtains; the curtain should prevent fines from entering the CWB and from entering the pond.
2. Install the downstream and upstream sand bag cofferdams; the cofferdams should be located within the areas confined by the turbidity curtains.
3. Install the dewatering sump pump and connect it to a sediment basin located either on the upstream or downstream side of the roadway. The basin should be located a minimum of 20-feet from a designated wetland.
4. Connect the dewatering sump pump to the sediment basin and dewater the site confined within the two cofferdams.
5. Use Alternating two-way traffic patterns with temporary signals to maintain traffic over the upstream side of the roadway. If necessary, temporary portable concrete barrier will be used to provide separation between the alternating two-way traffic and the work area.
6. Construct the downstream side of the proposed culvert.
7. Construct and compact the roadway located over the downstream side of the box culvert (selects only).
8. Shift traffic to the downstream side of the roadway and continue to use alternating two-way traffic patterns with temporary signals to maintain traffic over the downstream side of the culvert. If necessary, portable concrete barrier will be used to provide separation between the alternating two-way traffic and the work area.
9. Construct the upstream side of the proposed box culvert.
10. Construct and compact the roadway located over the upstream side of the box culvert (selects only).
11. Once all permanent erosion control measures are in place, remove both the upstream and downstream cofferdams and remove the upstream and downstream turbidity curtains.
12. Using flaggers, remove the portable concrete barrier (if installed) and the temporary signals.

Flow will not be allowed through the new culvert until all permanent erosion control measures are in place and the site is stabilized for flow.

Step 3: Remove Water Diversion Structure and return site to original conditions

1. Install a turbidity curtain on the upstream and on the downstream side of the CWB pipe; the curtains should be placed to prevent any fines from entering into the newly installed culvert or to enter into the pond.

2. Install a sand bag cofferdam, to dewater the site, on the upstream side and on the downstream side of the CWB pipe within the area contained by the turbidity curtains.
3. Place a sediment basin on the upstream side of the roadway or on the downstream side of the roadway; locate the basins a minimum of 20-feet from any delineated wetland.
4. Connect a dewatering sump pump to the sediment basin and dewater the site.
5. Remove the water diversion structure pipe using alternating two-way traffic patterns with flaggers; remove the pipe from the downstream side to the upstream side.
6. Once the pipe is fully removed, rebuild the roadway selects.
7. Remove the sump pump, both sand bag cofferdam, and both turbidity curtains in that order.
8. Using flaggers and alternating two-way traffic patterns, reconstruct the asphalt roadway and install new guardrail on the downstream side of the roadway.

All erosion control measure, installed at the inception of the project, will be maintained until the site has returned to its original conditions.

CONTROL OF AQUATIC INVASIVES DURING CONSTRUCTION

District 3 understands that the downstream pond may contain Milfoil. The use of standard construction BMPs will prevent the spreading of invasive species.

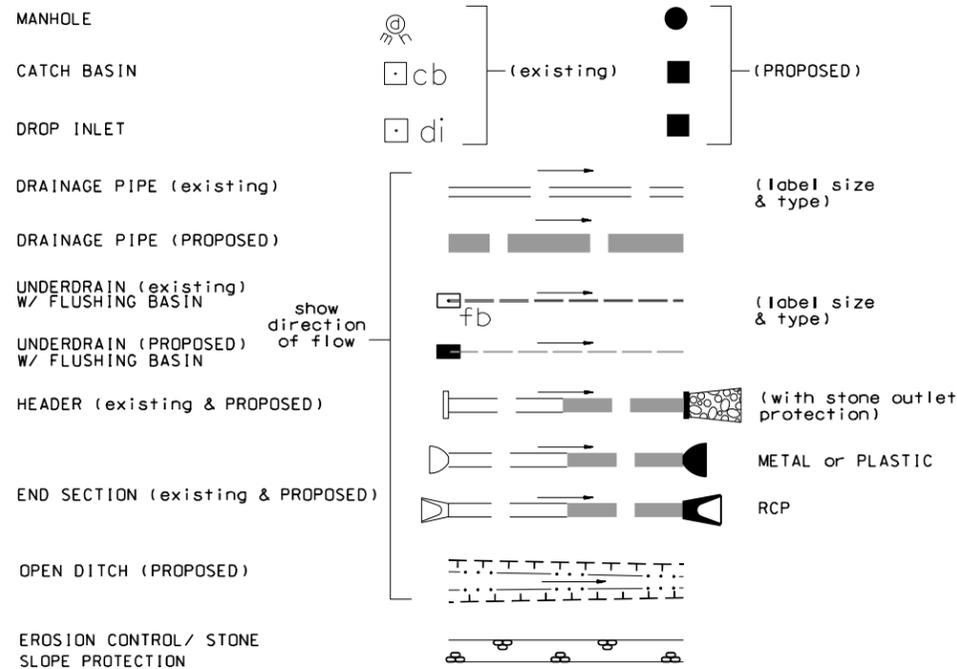
Construction activities will be confined within an area surrounded by turbidity barrier (in the water) and compost sock (on dry land).

During construction of the culvert, the only water that will outfall directly into the downstream pond will be from the clean water by-pass, which will be conveyed through a plastic pipe by gravity methods.

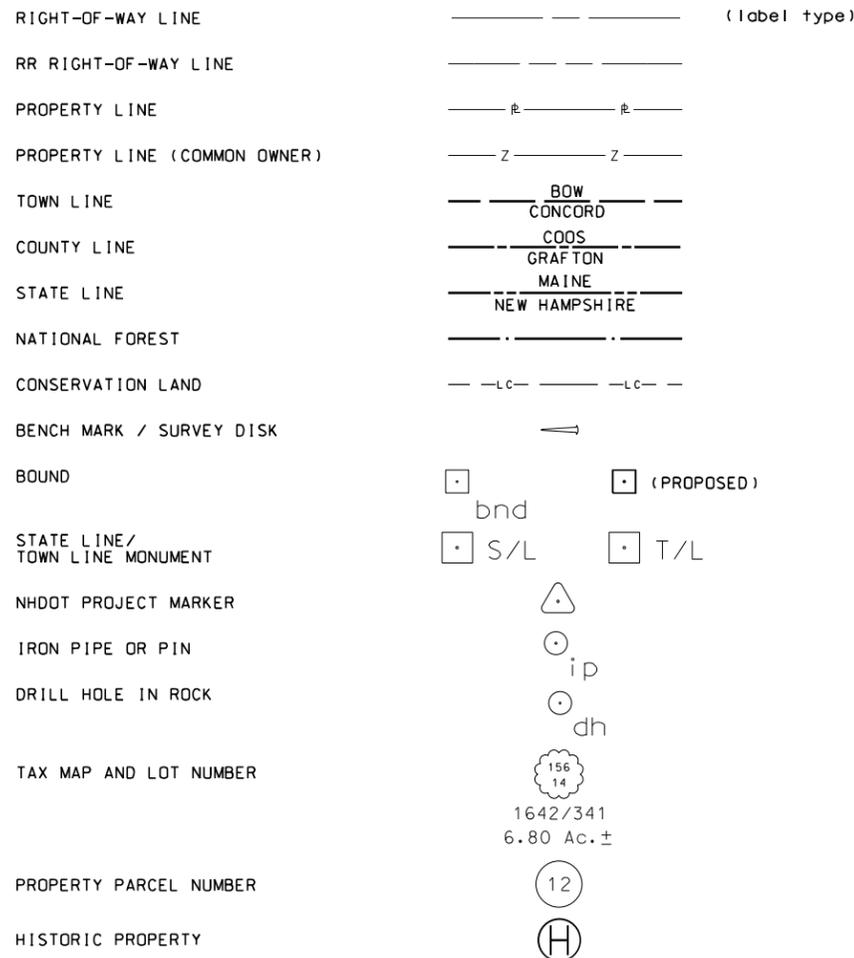
Pumped water, from dewatering the ground for construction activities, will be pumped to a sediment basin. The sediment basin is designed to filter out particulates while water infiltrates into the ground beneath the basin. Any sediment within the basin will be appropriately disposed.

At no time will pumped water from the construction site be directly outfalled into the downstream pond.

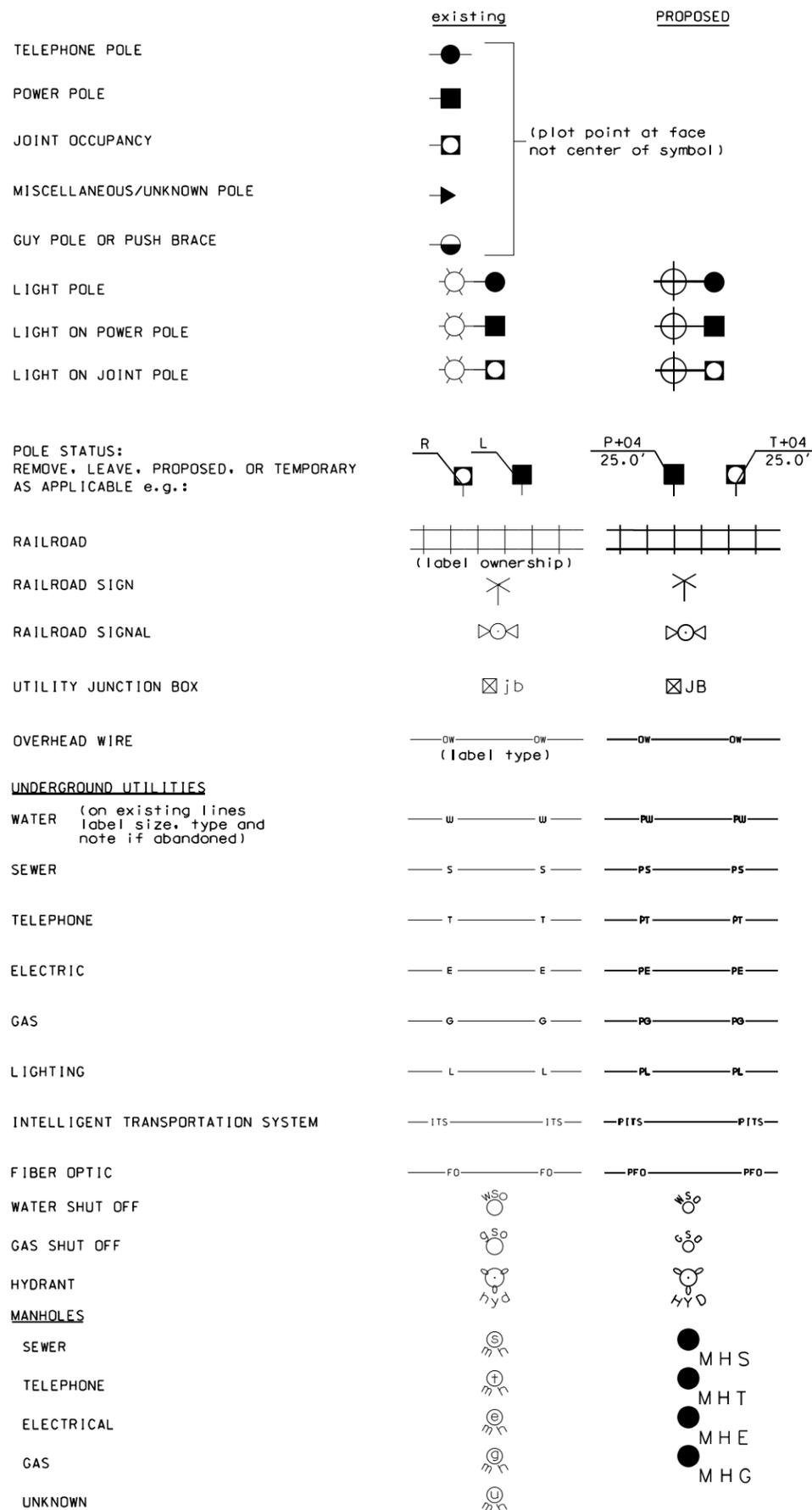
DRAINAGE



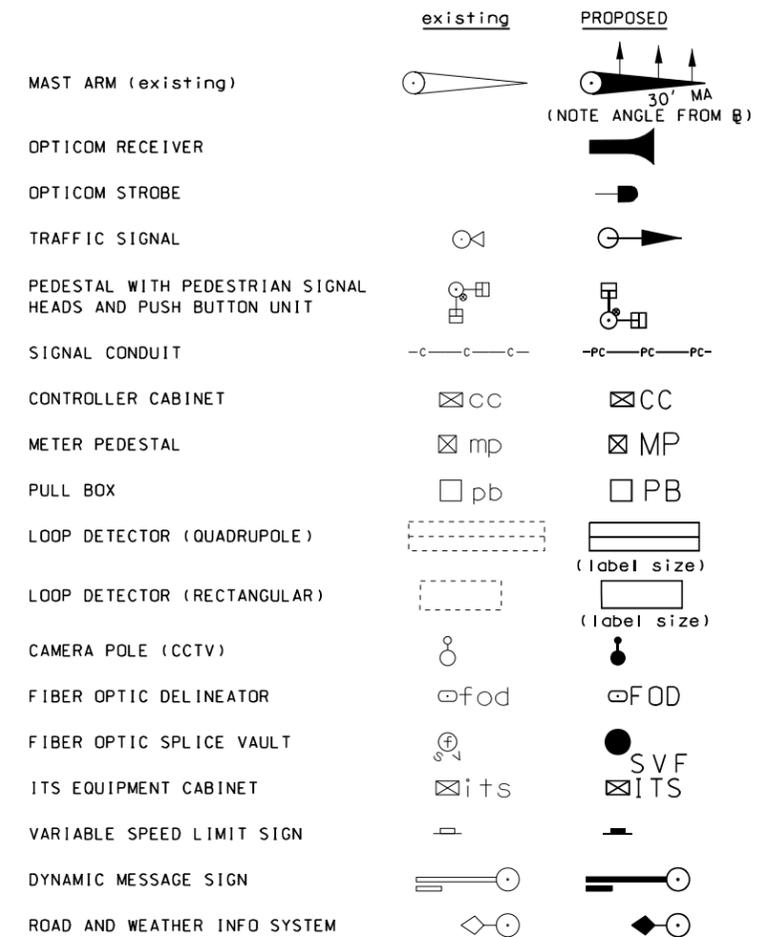
BOUNDARIES / RIGHT-OF-WAY



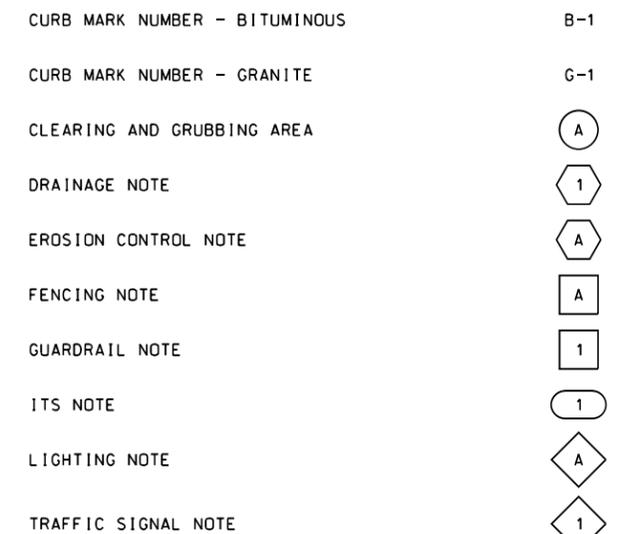
UTILITIES



TRAFFIC SIGNALS / ITS



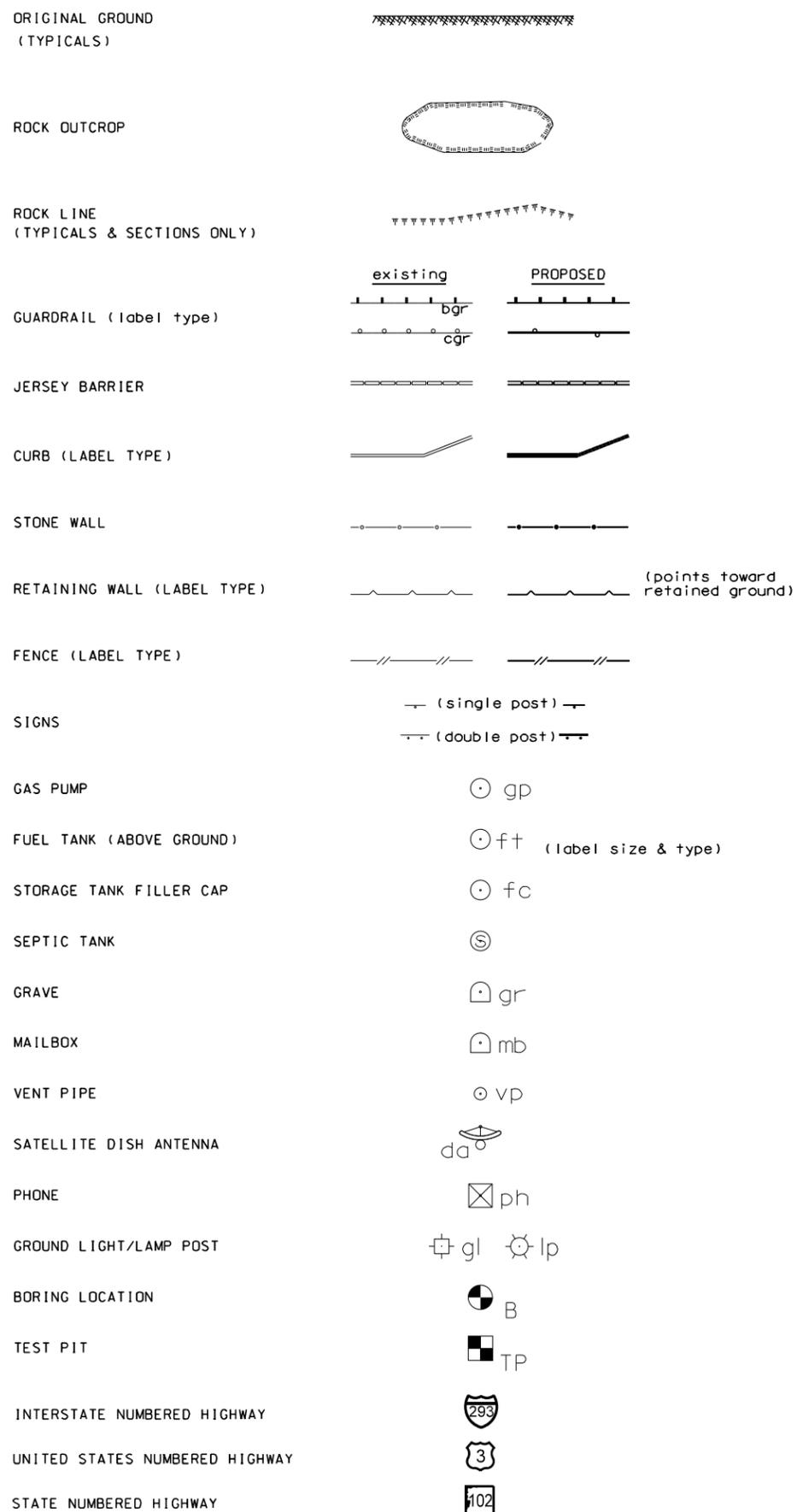
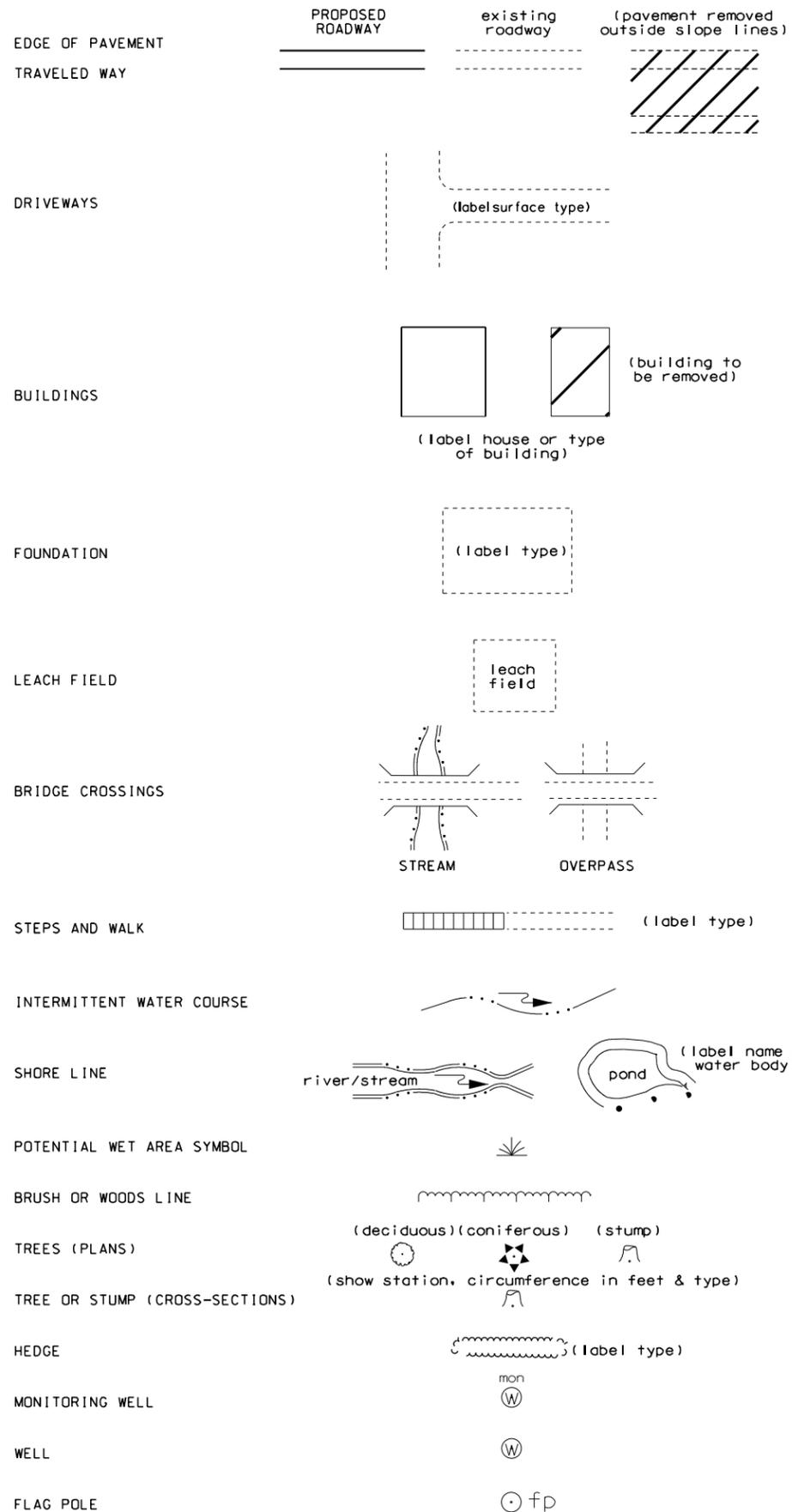
CONSTRUCTION NOTES



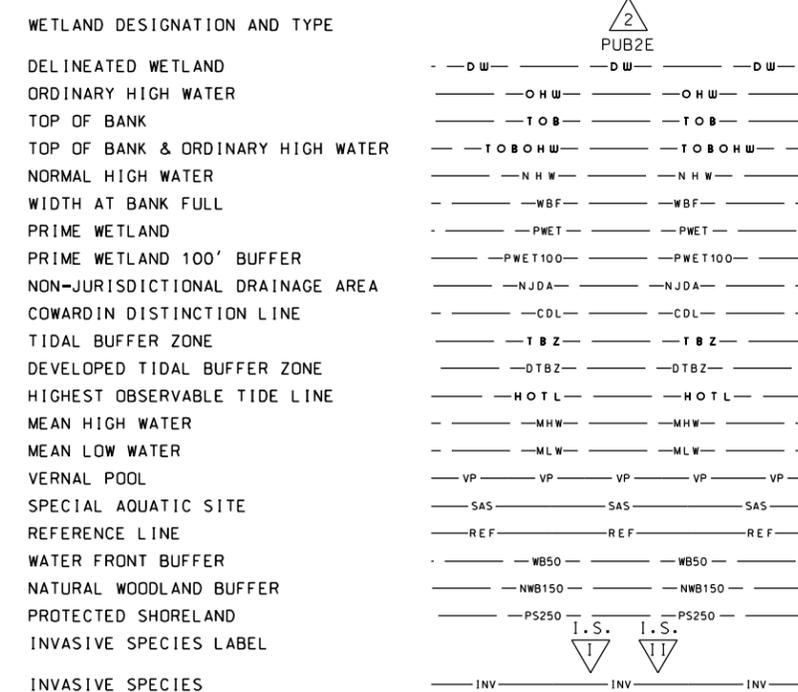
SHEET 2 OF 2

STATE OF NEW HAMPSHIRE				
Standards				
DEPARTMENT OF TRANSPORTATION • BUREAU OF HIGHWAY DESIGN				
STANDARD SYMBOLS				
REVISION DATE	DGN	STATE PROJECT NO.	SHEET NO.	TOTAL SHEETS
9-1-2016	stdsymbol_2		1	2

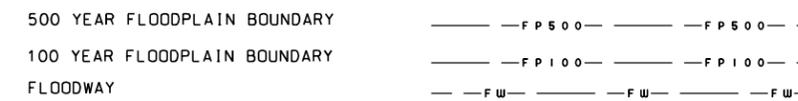
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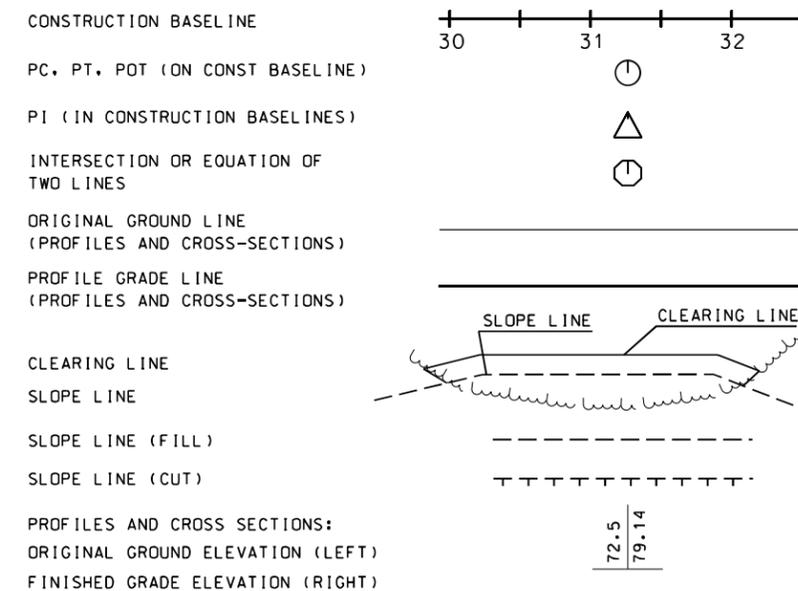
SHORELAND - WETLAND



FLOODPLAIN / FLOODWAY



ENGINEERING

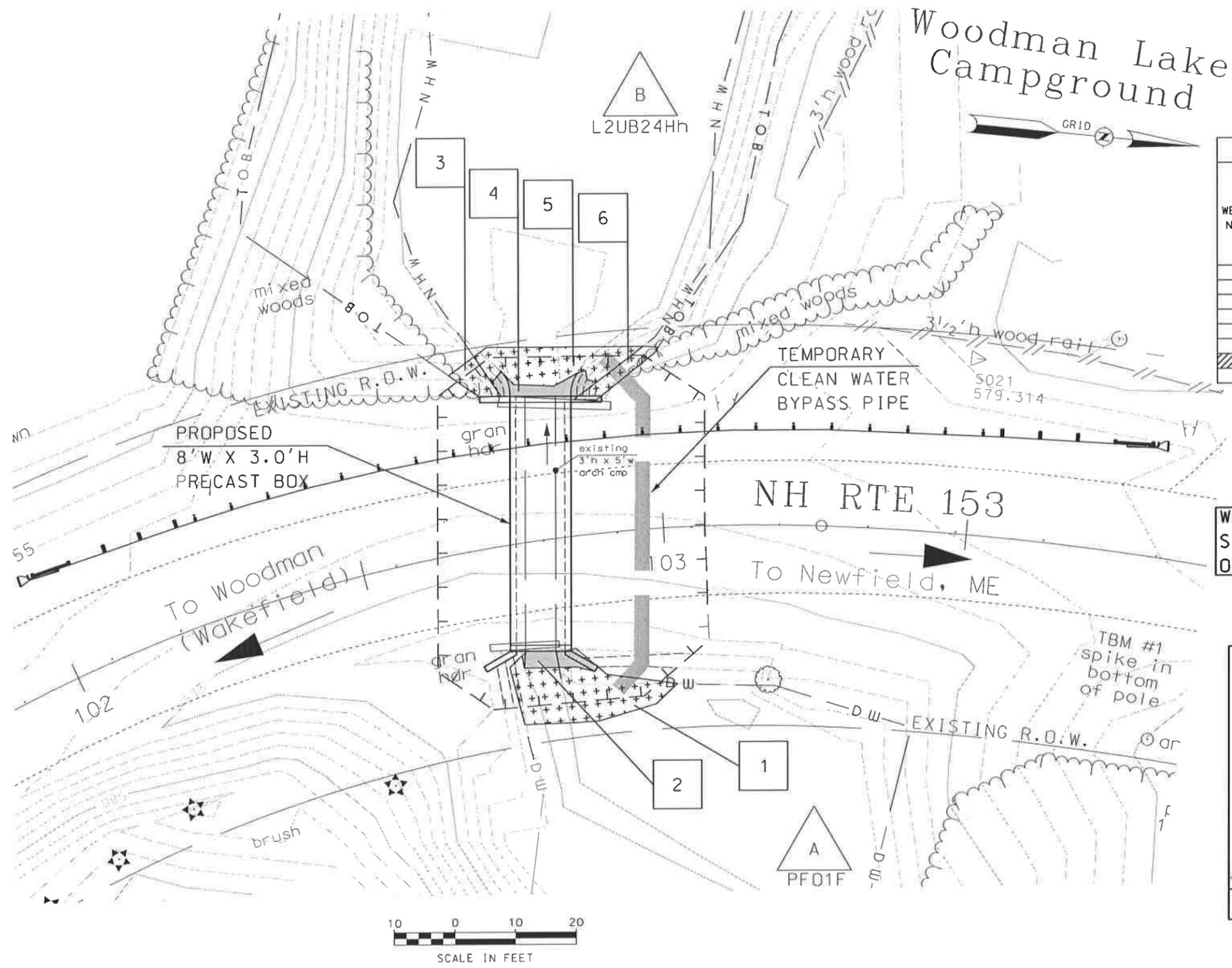


LEGEND

TYPE OF WETLAND IMPACT	SHADING/HATCHING	#	WETLAND DESIGNATION NUMBER
NEW HAMPSHIRE WETLANDS BUREAU (PERMANENT NDN-WETLAND)		#	WETLAND IMPACT LOCATION
NEW HAMPSHIRE WETLANDS BUREAU & ARMY CORP OF ENGINEERS (PERMANENT WETLAND)		#	WETLAND MITIGATION AREA
TEMPORARY IMPACTS			MITIGATION

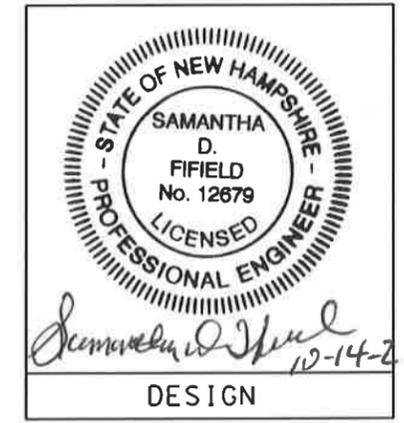
WETLAND IMPACT SUMMARY													
WETLAND NUMBER	WETLAND CLASSIFICATION	LOCATION	AREA IMPACTS						LINEAR STREAM IMPACTS FOR MITIGATION				
			PERMANENT				TEMPORARY		PERMANENT				
			N.H.W.B. (NON-WETLAND)		N.H.W.B. & A.C.O.E. (WETLAND)		SF	LF	BANK LEFT LF	BANK RIGHT LF	CHANNEL LF		
A	PFD1F	1											
A	PFD1F	2			29.7								
	BANK	3							27.2				
B	L2UB24Hh	4			42.5								
B	L2UB24Hh	5							126.6				
	BANK	6							27.7				
TOTAL					72.2			249.3					

PERMANENT IMPACTS: 72.2 SF
 TEMPORARY IMPACTS: 249.3 SF
 TOTAL IMPACTS: 321.5 SF



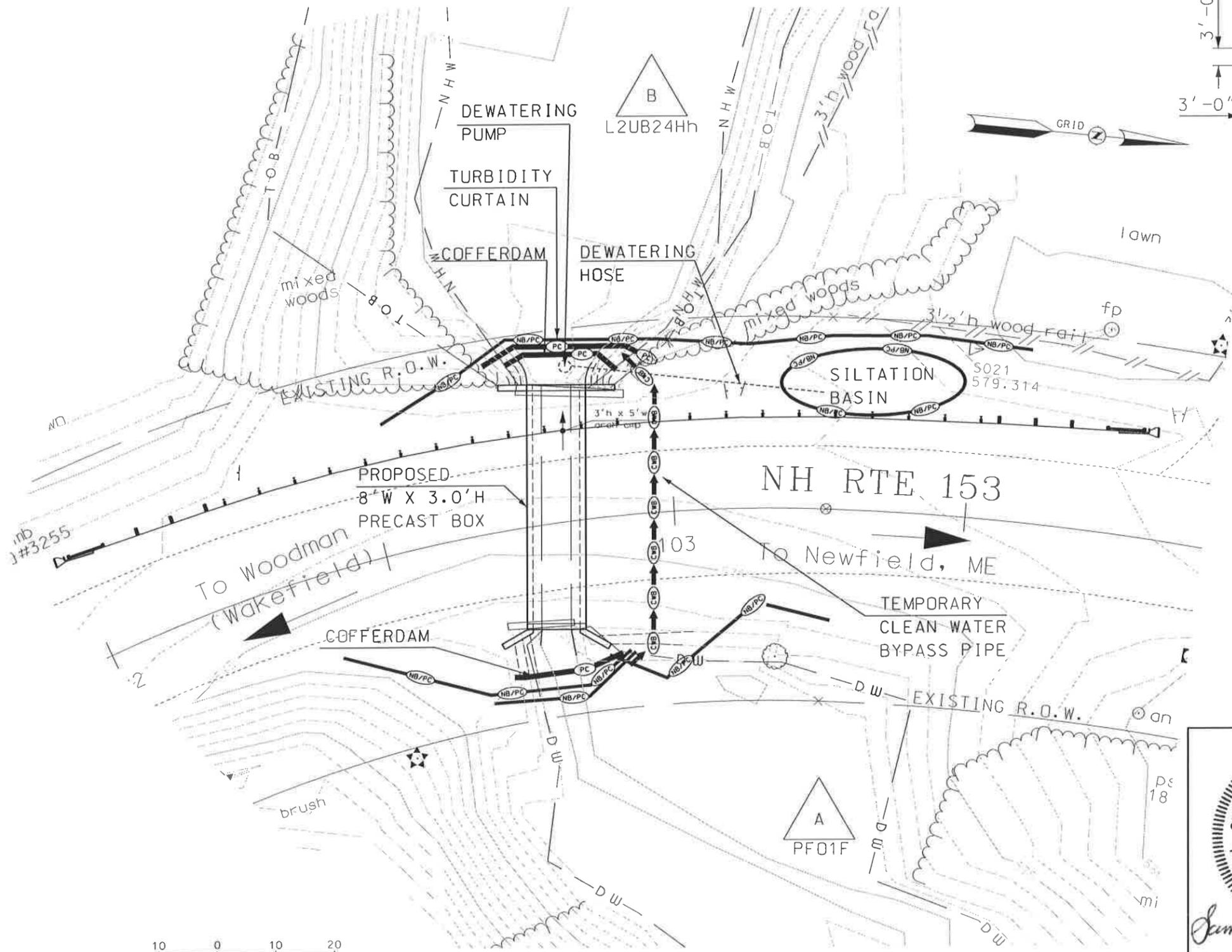
WETLANDS DELINEATED BY:
 SARAH LARGE & DEIDRA BENJAMIN
 ON 06/18/2021

WETLAND IMPACT PLANS
 DATE 10-14-2021

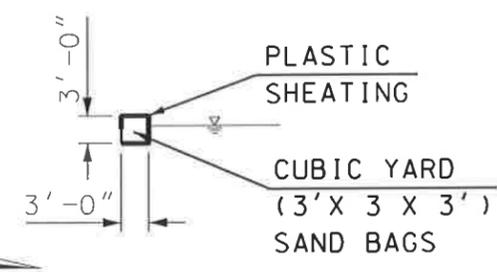


NH DEPARTMENT OF TRANSPORTATION
 HIGHWAY MAINTENANCE DISTRICT 3
 CULVERT REPLACEMENT PROJECT
 2019-M312-1
 WAKEFIELD - NH ROUTE 153
 OVER NO NAME BROOK

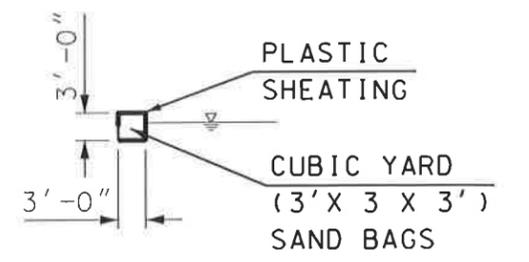




UPSTREAM COFFERDAM



DOWNSTREAM COFFERDAM



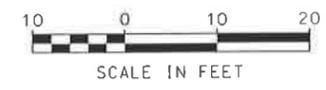
EROSION CONTROL PLAN LEGEND	
	PERIMETER CONTROL SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM
	NATURAL BUFFER/PERIMETER CONTROL SILT FENCE EROSION CONTROL MIX BERM EROSION CONTROL MIX SOX TURBIDITY CURTAIN SHEET PILE COFFER DAM
	CHANNEL PROTECTION STONE CHECK DAMS STRAW WATTLES CHANNEL MATTING CLASS D EROSION STONE CLASS C STONE
	CLEAN WATER BYPASS PUMP THROUGH PIPE DRAIN THROUGH PIPE OR CHANNEL

WETLANDS DELINEATED BY:
SARAH LARGE & DEIDRA BENJAMIN
ON 06/18/2021

EROSION CONTROL PLANS
DATE 10-14-21

STATE OF NEW HAMPSHIRE
SAMANTHA D. FIFIELD
No. 12679
LICENSED PROFESSIONAL ENGINEER
Samantha D. Fifield
10-14-21
DESIGN

NH DEPARTMENT OF TRANSPORTATION
HIGHWAY MAINTENANCE DISTRICT 3
CULVERT REPLACEMENT PROJECT
2019-M312-1
WAKEFIELD - NH ROUTE 153
OVER NO NAME BROOK



U.S. Department of
Homeland Security

United States
Coast Guard



Commander (dpb)
First Coast Guard District

One South Street
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April 2, 2021

NH Department of Transportation
Bureau of Environment
Attn: Ms. Arin Mills
Environmental Manager
7 Hazen Drive
Concord, NH 03302
Arin.j.mills@dot.nh.gov

via e-mail

Re: NV-1086: US Route 3 over Unnamed Stream; NH Route 153(culvert) over Unnamed Stream; NH Route 153 over Unnamed Stream; River Road over Great Brook

Dear Ms. Mills,

This is in response to your letter dated April 1, 2021 and corresponding information requesting whether the Coast Guard will require permits for the referenced bridge projects. We have examined the proposed project areas with regard to their status as navigable waterways of the United States for purposes of Coast Guard bridge jurisdiction.

Our examination indicates that there is no sufficient factual support for concluding that the Unnamed Stream, Thornton, NH, the Unnamed Stream, Eaton, NH, the Unnamed Stream, Wakefield, NH, and Great Brook, Bridgewater, NH at the project locations, have current or historic navigation occurring on these waters of the United States. Since this is the case, Coast Guard bridge permits or exemptions will not be required for the referenced bridge projects.

If you have any questions feel free to contact this office at the number above.

Sincerely,

D. A. Fisher
Bridge Program Manager
U.S. Coast Guard
By direction

E-Copy: 1) USCG Sector Northern New England, Waterways
2) USACE, New England Division, Navigation Section

Mills, Arin

From: Mills, Arin <Arin.J.Mills@dot.nh.gov>
Sent: Thursday, April 1, 2021 11:55 AM
To: Fisher, Donna A CIV
Cc: Lewis, Dale K CIV; Stieb, Jeffrey D CIV
Subject: [Non-DoD Source] USCG Review- Culvert Work NHDOT District 3
Attachments: Wakefield_Topo.pdf; Wakefield_2019-M312-1.zip; Thornton_2020-M325-1_Topo.pdf; Thornton_2020-M324-4.zip; Eaton_1832H-1.zip; Loc Map Eaton NH 153 over the inlet to Crystal Lake Culvert.pdf; Bridgewater_2020-M324-02_Topo.pdf; Bridgewater_2020-M324-2.zip

Hello Donna,

NHDOT is proposing to conduct repair/replacement to the various stream crossings in District 3 and requests your review. To streamline the review, I have included multiple project locations with details below on each site. I have further provided a location map for each, as well as GIS data to assist with your review. Please review from your agency perspective and let me know if you have any concerns for any of the projects as described below. Each of these projects intends to be constructed by District forces, and will very likely require a wetland permit from NHDES to conduct the work.

Thornton, 2020-M325-1: Repair an existing 36" RCP which carries US 3 over an un-named stream in Thornton. Work will include repairs to address invert deterioration with possible slip-lining.

Eaton, 1832-H-1: Replacement of the existing stone culvert which carries NH 153 over an un-named stream which is a tributary to Crystal Lake.

Wakefield, 2019-M312-1: Replacement of existing CMP which carries NH 153 over an un-named stream which is a tributary to the south end of Belleau Lake in Wakefield. Work will also replacement of headwalls and address beaver activity in the area.

Bridgewater, 2020-M324-2: Repair and existing twin 36" RCP which carries River Road over Great Brook in Bridgewater. A design is still in development, but may include possible slip-lining or possible replacement.

Thanks, and feel free to reach out with any questions.

Arin Mills
Environmental Manager, Operations Management
NH Department of Transportation
Bureau of Environment
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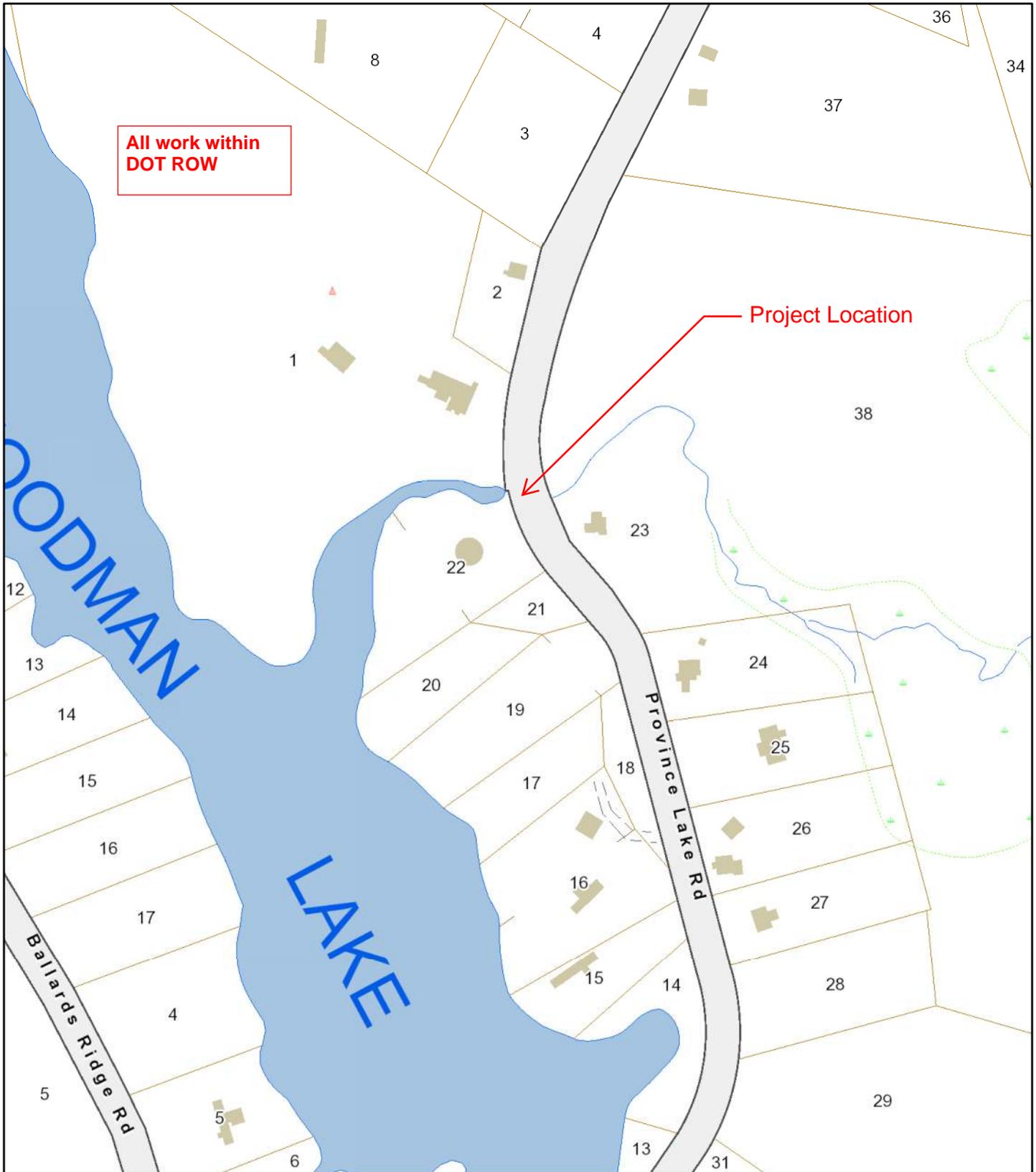
Wakefield, M312-1

Wakefield, NH

1 inch = 200 Feet



December 24, 2019



Data shown on this map is provided for planning and informational purposes only. The municipality and CAI Technologies are not responsible for any use for other purposes or misuse or misrepresentation of this map.

Wakefield Culvert Replacement, DOT Project #2019-M312-1

September 24, 2021

A letter from the NH Department of Transportation was sent to the Town of Wakefield, to include the Selectmen and Conservation Commission, on April 9, 2021. To date no comments have been received.

Arin Mills
Bureau of Environment
NHDOT